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CHARLES ELMORE CROPLEY

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In the

Supreme Court of the United States

(OCTOBER TERM, 1945)

HALLIBURTON OIL WELL CEMENTING COMPANY,
a Delaware corporation,
Petitioner,

VERSUS

CRANFORD P. WALKER and CRANFORD P. WALKER, D. A. WALKER, ROBERT P. MILLER and MILO C. KETCHUM doing business as Depthograph Company, a copartnership,
Respondents.

BRIEF FOR HALLIBURTON OIL WELL CEMENTING COMPANY, PETITIONER

EARL BABCOCK,
Duncan, Oklahoma,
Attorney for Petitioner.

November, 1945

TIERBACK TYPESETTING CO. 13 S. Walker, Oklahoma City 4, Okla.

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In the

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(OCTOBER TERM, 1945)

No. 290

HALLIBURTON OIL WELL CEMENTING COMPANY,
a Delaware corporation,
Petitioner,

VERSUS

CRANFORD P. WALKER and CRANFORD P. WALKER, D. A. WALKER, ROBERT P. MILLER and MILO C. KETCHUM
doing business as Depthograph Company
a copartnership,
Respondents.

BRIEF FOR HALLIBURTON OIL WELL CEMENTING COMPANY, PETITIONER

STATEMENT OF THE CASE

This is a suit for patent infringement. Cranford P. Walker, *et al.*, Respondents, sued Halliburton Oil Well Cementing Company, Petitioner, in the United States District Court for the Southern District of California, Central Division, on three patents issued to Cranford P. Walker. Two of these patents were held invalid by the Circuit Court of Appeals for the Ninth Circuit. The third patent in suit, No. 2,156,519 (R. 587) was held valid and infringed. Certiorari has been granted only as to patent 2,156,519.

Opinions Below

The District Court rendered no formal opinion, but the findings of fact and conclusions of law appear in the record (R. 28-32). The opinion of the Circuit Court of Appeals is reported at 146 Fed. (2d) 817 and is in the record (Vol. VI, R. 1594). The opinion *per curiam*, and the concurring opinion of Judge Denman, denying a petition for rehearing on patent 2,156,519 are reported at 149 Fed. (2d) 896 and appear in the record (R. 1614).

Jurisdiction

The petition for certiorari was granted October 15, 1945.

The grounds for jurisdiction are:

1. The decree holding patent 2,156,519 valid and infringed was entered December 28, 1944 (R. 1613). Petition for rehearing was denied June 11, 1945 (R. 1613).

2. The decree was rendered in a suit in equity brought under the Patent Statutes to determine the issues of validity and infringement of letters patent issued by virtue of Revised Statute No. 4886 (U. S. C., Title 35, Sec. 31).

3. The statute under which the jurisdiction of this Court is invoked is Sec. 240 (a) of the Judicial Code, 28 U. S. C. 347, as amended by the Act of February 13, 1925.

4. Cases which sustain the jurisdiction are:

—*United Carbon Co.* v. *Binney & Smith Co.*, 317 U. S. 228, 87 L. Ed. 232;

Schriber-Schroth Co. v. *Cleveland Trust Co.*, 311 U. S. 211, 217, 85 L. Ed. 132, 135;

Mackay Radio & Telegraph Co. v. *Radio Corp. of America*, 306 U. S. 86, 89, 83 L. Ed. 506, 508;

Exhibit Supply Co. v. *Ace Patents Corp.*, 315 U. S. 126, 128, 86 L. Ed. 736, 740;

Muncie Gear Works v. *Outboard M. & Mfg. Co.*, 315 U. S. 759, 766, 86 L. Ed. 1171, 1177.

Specification of Errors

The errors urged by Petitioner are that the Circuit Court of Appeals for the Ninth Circuit erred:

1. In affirming the decree of the District Court in holding Walker patent 2,156,519 to be valid and infringed by Petitioner;

2. In failing to reverse the decree of the District Court in holding the Walker patent 2,156,519 valid and infringed by Petitioner;

3. In holding Walker patent 2,156,519 to be valid;

4. In holding Walker patent 2,156,519 to have been infringed by Petitioner;

5. In failing to hold that the law established by the decision of this Court in *General Electric Co.* v. *Wabash Appliance Corp.*, 304 U. S. 364, 82 L. Ed. 1402, was controlling and dispositive of the litigation;

6. In failing to hold that the law established by the decision of this Court in *Schriber-Schroth Co.* v. *Cleveland Trust Co.*, 311 U. S. 211, 85 L. Ed. 132, was controlling and dispositive of the litigation;

7. In holding that claims 1, 13, 14, 15 and 17 of Walker patent 2,156,519 define the alleged improvement thereof with sufficient distinctness and clarity to comply with R. S. Sec. 4888 requiring a patentee to "particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery;"

8. In holding that claims 1, 13, 14, 15 and 17 of Walker patent 2,156,519 cover the use of electrical apparatus not shown or described in the patent, after the Patent Office had refused to grant Walker a claim specific to such electrical apparatus in a copending application for patent.

Questions Presented

The questions presented by the petition are:

Question 1. Is the doctrine of the case of *General Electric Co.* v. *Wabash Appliance Corp.*, 304 U. S. 364, 82 L. Ed. 1402, condemning the use of indefinite and functional language at the exact point of novelty in a claim of a patent, applicable to a claim on a combination of elements, or should the doctrine be limited, as held (R. 1614, 1616) by the Ninth Circuit Court of Appeals, to a claim on a "single element" or "specific product?"

Question 2. Is the doctrine of the case of *Schriber-Schroth Co.* v. *Cleveland Trust Co.*, 311 U. S. 211, 85 L.

Ed. 132, precluding the giving of a claim of a patent such scope as will include within its terms subject matter rejected and cancelled while the application for patent was pending, applicable to a situation where an inventor files two applications on different species of his invention, the rejection and cancellation taking place in one and the claim in suit issuing in the other?

History of the Development of the Art

Patent 2,156,519 (R. 587) is concerned with the location of the level of fluid or an obstruction in a well, such as an oil well. The apparatus disclosed includes a cylinder of gas under pressure adapted to be connected to the casing of the well. A quick opening valve is provided so that the gas may enter the well rapidly and create a pressure wave in the annular space between the casing and tubing in the well. A system for recording on a chart the time when the wave is initiated and the time when echoes return from obstructions in the well, serves as means to enable calculations to be made as to the depth to the obstructions.

The District Court found that patent 2,156,519 was an "improvement" patent (R. 28). Indeed, patent 2,156,519 itself acknowledges (R. 591, Col. 2, *l.* 14) the prior Patent No. 2,047,974 to Lehr and Wyatt, and states (R. 591, Col. 2, *ll.* 18-20) that it is an object of Walker's invention to improve upon the method disclosed in the Lehr and Wyatt patent.

Even prior to Lehr and Wyatt, it had been proposed to time echoes to measure distance in tubing. As early as 1898, in the patent to Batcheller No. 602,422 (R. 1065), it had been proposed to locate obstructions in this way. A gun K was fired into a tube J and the echo was detected and recorded by mechanism H (shown in detail in figure 4 of the patent) such as that commonly used in those days to make phonograph records.* In figure 5 (R. 1068) of the patent n^1 indicates the record made at the time the gun was fired and n^2 the record made on the return of the echo. The time required for the echo being proportional to the distance the sound traveled, the location of the obstruction could be calculated.

The Union Oil Company was the first to propose the use of this kind of apparatus for locating fluid levels in oil wells. In 1927 an apparatus for this purpose was built (R. 506). A gun was used to make a sound and a record of the time required for the echo to come back from the fluid in the well was made with ordinary electrical equipment consisting of a microphone, an amplifier and a motion picture camera recorder (R. 506-511).

Prior to November, 1933, the Shell Oil Company decided to use echoes to determine fluid levels in wells

---

*As shown in detail in figure 4 of the Batcheller patent (R. 1068):

"The sound-impulse-recording mechanism operates a light pivot-lever H, having at its end a stylus h. This lever, as shown, is pivoted to a frame H2, supported on the standard E2, the pivot being indicated at H1, a light spring H3 acting to press the lever H in one direction, as shown in Figs. 1 and 4, and an adjusting-screw H8 being provided as an abutment to prevent the movement of the lever H against the spring beyond a definite point. The lever is actuated by a connection H7, connected also to a diaphragm H6, which is secured to a block H4, hollowed out to form a chamber H5, into which opens a passage h4, or rather a tubular connection H11, screwing into the passage h4." (R. 1070).

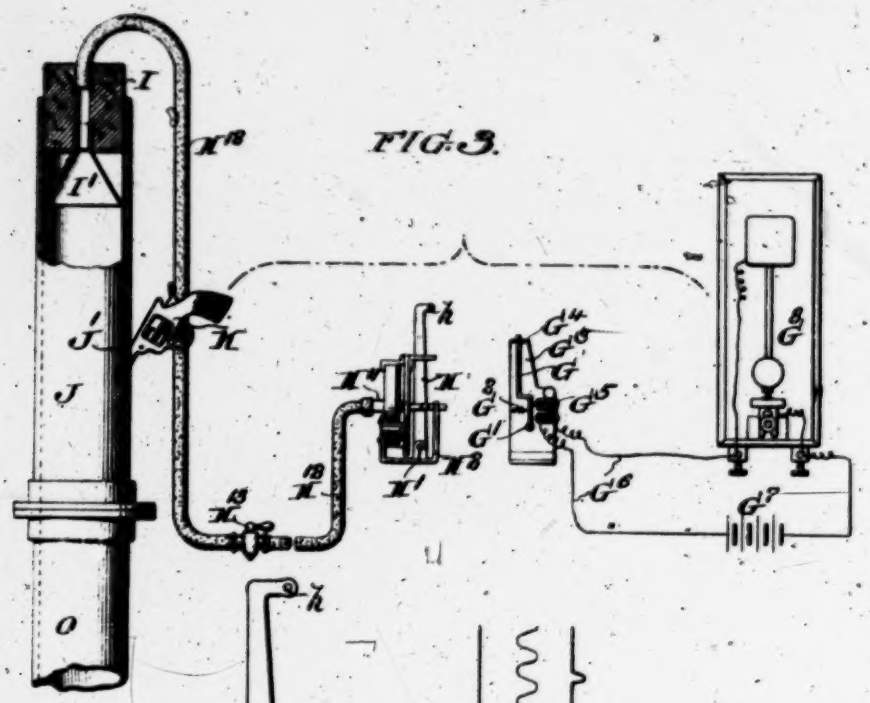
(No Model.) 2 Sheets—Sheet 2.

B. C. BATCHELLER.

APPARATUS FOR LOCATING OBSTRUCTIONS IN TUBES.

No. 602,422. Patented Apr. 19, 1898.

FIG. 3.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(R. 245). Lehr and Wyatt were experienced oil men and employees of the Shell Oil Co. (R. 245, 250, 262). They had heard rumors about the work which had been done by the Union Oil Co. (R. 246, 247, 264). The Lehr & Wyatt patent acknowledges (R. 1103, Col. 1, *ll.* 10-27) prior attempts to measure depths of wells with sound waves. Lehr and Wyatt experimented with a gun and other sound producing devices (R. 264, 265), but they decided to use a pressure chamber instead of a gun for creating a pressure impulse. Lehr testified that a .38 caliber gun did not have enough energy to produce satisfactory results (R. 265, 266) and his patent states that the "sound method" is more or less unreliable (R. 1103, Col 1, *ll.* 41-42). A gun causes a "pressure impulse" as well as a sound (R. 336), but if gas is compressed in a cylinder and then liberated into the well through a quick-opening valve, the pressure impulse is much greater. "Compared with an impulse chamber, three pounds pressure * * * gave much more of a return than a .38 cartridge." (Lehr R. 265, 266). The Lehr and Wyatt patent suggests that the pressure in the chamber be 100 pounds per square inch (R. 1104, Col. 1, *l.* 40). The pressure impulse chamber is shown at 4 in the drawing (R. 1102) of the Lehr and Wyatt patent. When the valve 6 is opened, gas is admitted into the annular space between the tubing 8 and the casing 14 of an oil well and creates a pressure impulse, therein. This pressure impulse traveling at the same speed as that of sound (R. 338 goes down the well and echoes back. By observing the elapsed time for this impulse to traverse the space from the well head to an obstruction or liquid level in the well and return, the depth of the obstruction or liquid level can be determined.

The Lehr and Wyatt patent states (R. 1104, Col. 1, *ll.* 3, 4) that the elapsed time may be observed or indicated in any desired manner. As disclosed in Fig. 2 (R. 1102) one apparatus for making this observation is an ordinary microphone 15, provided with a suitable electrical amplifier 18 and a recorder 16. The recorder may be of a known type, in which a pen or pencil 21 runs on a recording drum 23 and is controlled by the circuit 17 from the microphone and amplifier. With such a device a record is made when the valve is opened to let the pressure impulse into the well and also when the echo returns from an obstruction in the well.

It is obvious and inherent in the Lehr and Wyatt device that if a partial obstruction in the well sends back an echo, that also will be recorded. Experiments conducted by experts in this art show that apparatus constructed in accordance with Figure 2 of the Lehr and Wyatt patent is operative to record fluid level in a well and also to record the level of other obstructions or partial obstructions, such as a tubing catcher or collars on tubing in the well. See Exhibits F, G, H and I (R. 885-889) and testimony thereon (R. 292, 293, 416-434).

The Novelty in the Patent in Suit

It is thus clear that the art was quite well developed by the time Walker entered the field. Walker was not a pioneer. As a matter of fact, he became interested in this art as the result of a demonstration to him by Lehr of the pressure impulse method of locating fluid level on one of the Shell Oil Company wells at Ventura, California, in October, 1935 (R. 154, 155, 514, 515). Walker adopted Lehr's pressure chamber with a quick-opening valve for

July 21, 1936. P. E. LEHR ET AL 2,047,974

METHOD AND APPARATUS FOR MEASURING WELL DEPTHS

Filed Nov. 1, 1933

Fig. 1

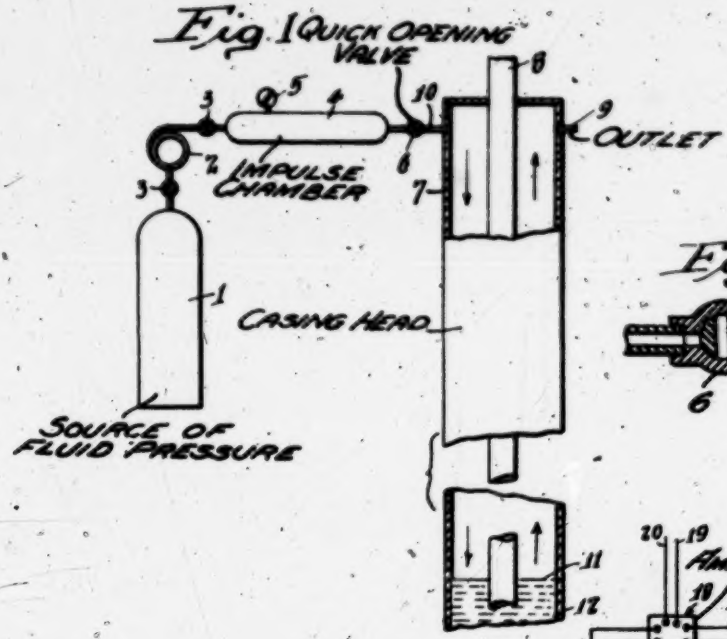


Fig. 4

Fig. 2

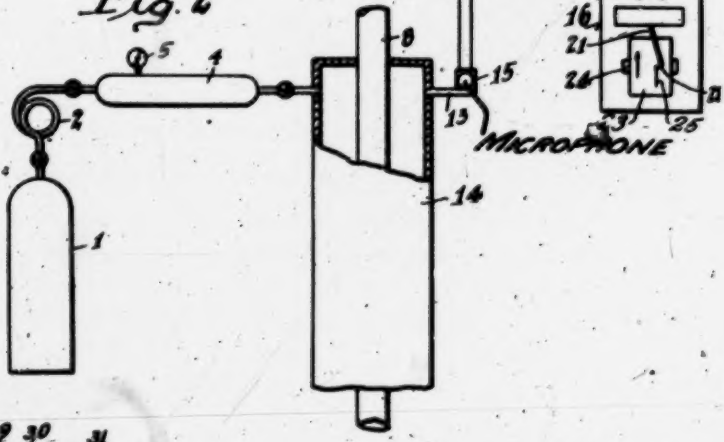
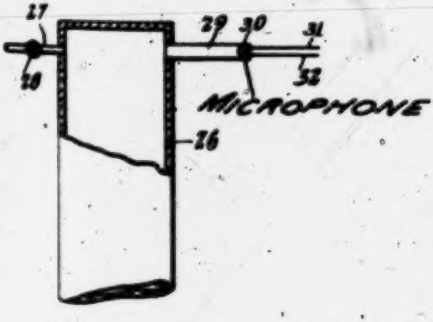


Fig. 3



Inventors

Harold S. Wyatt

Paul E. Lehr

By Lyon & Lyon

Attorneys

creating a pressure impulse in the well. Walker's improvement, found by the courts below to constitute invention, resides in the particular arrangement he proposed for recording the echoes from the well.

In the drawing of the Walker patent in suit (R. 588) the pressure impulse chamber is shown at 12, and the quick-opening valve at 16. These are connected to the well casing 4 by the coupling 19. The pressure impulse and its echoes are conveyed to the recording system by the pipe 18. The recording system includes a diaphragm 23 and a mirror 26, so that by the light beam 37 the pulses are recorded on a photographic film 39.

A mechanical diaphragm was old in an apparatus for recording echoes. That is what is disclosed in the patent to Batcheller 602,422 granted April 19, 1898 (R. 1068). Likewise, the use of a light beam and photosensitive film was old. See the patent to Taylor (R. 1096).*

Walker's system differs from the recorders of the prior art in the use of a pipe 18 of a particular length. There being nothing electrical about his recording system, Walker could not use an electrical amplifier such as that disclosed in the Lehr and Wyatt patent, to increase the intensity of returning signals, so he used an acoustical tuned resonator to amplify the echoes. The pipe 18, adjustable in length by the coupling 19, serves this purpose. The pipe 18 connects the housing for the pressure responsive diaphragm 23 to the well casing. The pipe can

*In the Taylor patent, movement of the mirror 11 is recorded on the film 2. Light from the lamp 12 is directed upon the mirror 11 and then through the optical system in the tube 5 to expose the film 2. (See specification R. 1097).

be "tuned" by adjusting its length to cause it to respond particularly to echoes from tubing collars. These echoes are then said to be "amplified," while echoes from other obstructions or partial obstructions are "damped out" (R. 595, Col. 1, *ll.* 48-71). The only novel element in the claims here in suit is the adjustable tuning pipe 18.* Both lower courts found the novelty in the patent to reside in the addition of this element to the Lehr and Wyatt system (R. 29, 1599, 1600). The District Court called it a "tuned acoustical resonator" (R. 29) and the Circuit Court of Appeals called it an "adjustable tuning pipe" (R. 1598).

While new in a device for recording echoes in wells, an adjustable pipe is not a novel means for causing a sound recorder to respond particularly to a certain frequency. In Fig. 17 of the patent to Tucker No. 1,451,356 (R. 1080), granted August 31, 1920, such a device is shown associated with a microphone connected to a system which may be recording.**

A tuned acoustical resonator was not even new with Tucker. His patent states (R. 1085, Col. 1, *ll.* 47-58):

> "The tuning of each combined unit of sound detecting device and acoustic resonator to a particular pitch may be either fixed or adjustable; in either case the tuning being attained in a well known manner by the proper adjustment of the shape, length, and volume of the resonating chamber, or of the aperture near the grid of the thermic sound detecting de-

*On the attached drawing of the patent in suit, we have circled the reference numeral 18 for emphasis, since the alleged invention resides in the use of this adjustable pipe.

**The Tucker patent shows only an indicator such as a bell F or lamp H, but on page 4 of the patent (R. 1086) *ll.* 18-20, it is stated that "it may be understood that any other indicating or recording device may be used instead."

ay 2, 1939. C. P WALKER 2,156,519

MEANS FOR MEASURING THE LOCATION OF OBSTRUCTIONS IN WELLS

Filed Sept. 7, 1937 2 Sheets-Sheet 1

FIG. 1.

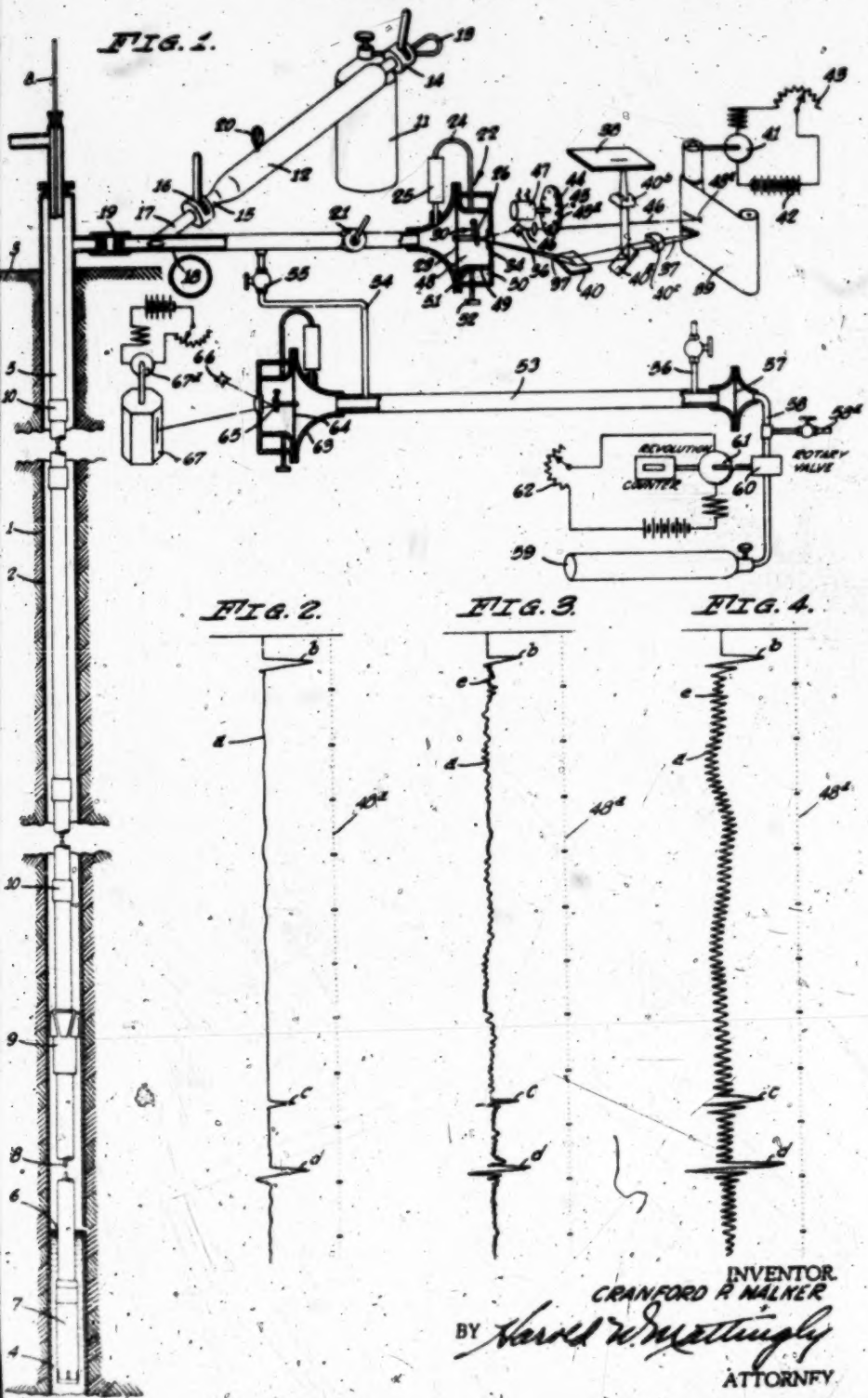


FIG. 2.

FIG. 3.

FIG. 4.

INVENTOR
CRANFORD P WALKER
BY Harold W. Hettinger
ATTORNEY

vice, or otherwise. Fig. 17 illustrates the method of tuning wherein the volume of the resonating chamber 1 is varied by a telescopic sliding movement."

Both of the lower courts have held, in effect, that invention is involved in substituting the recording system of the Tucker patent, which has an acoustical resonator, for the recording system of the Lehr and Wyatt patent, which has an electrical amplifier but does not have an acoustical resonator.*

The invention has been held to be of such a pioneer nature as to cover much more than this substitution, however. It has been held to cover an electrical recording system not disclosed or even hinted at in the patent. Petitioner's device has been held to infringe even though it has no acoustical resonator.

The Accused Device

In 1936, the Union Oil Company asked Dr. John J. Jakosky to develop the device that company had first experimented with in 1927 (R. 490, 491). The outcome was the apparatus known as the "Echo-Meter" (R. 491). Jakosky organized a company, International Geophysics, Inc., and for a time it provided the Echo-Meter service to the oil fields (R. 300). In May, 1940, the Petitioner, Halliburton Oil Well Cementing Company, purchased the business of International Geophysics, Inc., and rights under such patents as might issue thereon (R. 708).

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*In *Altoona Pub. Theatres* v. *Am. Tri-Ergon Corp.*, 294 U. S. 477, 486, 79 L. Ed. 1005, 1011, it was held that selection of elements from the prior art to make a better sound record did not involve invention.

In developing the Echo-Meter, Jakosky selected only devices known in the prior art.* He employed neither the Lehr and Wyatt system nor the Walker improvements thereon. He used a gun to create a sound, whereas Lehr and Wyatt and also Walker had used a pressure impulse chamber; and he used a microphone, electrical amplifier and recorder to record the shot and echoes, whereas Walker had used a diaphragm recorder. The microphone selected was one known to be particularly suitable for recording gun shots. It consists merely of a grid of fine wire heated electrically, the wire being of such nature that its resistance varies greatly with temperature (R. 288, 289). A puff of air through the grid in either direction cools it and changes the resistance in proportion to the velocity of the air (R. 289). By recording the resistance of the grid a record of air movement is obtained (R. 289).

This microphone with an amplifier and a recorder was known (R. 392). It is described in U. S. Patent 1,351,356 to Tucker (R. 1077), granted August 31, 1920, for "Sound Detecting Device." It was also described by Tucker in a paper (R. 926), published January 5, 1923, before the Royal Society of Arts in London, entitled "The Hot Wire Microphone and Its Application to Problems of Sound." Tucker

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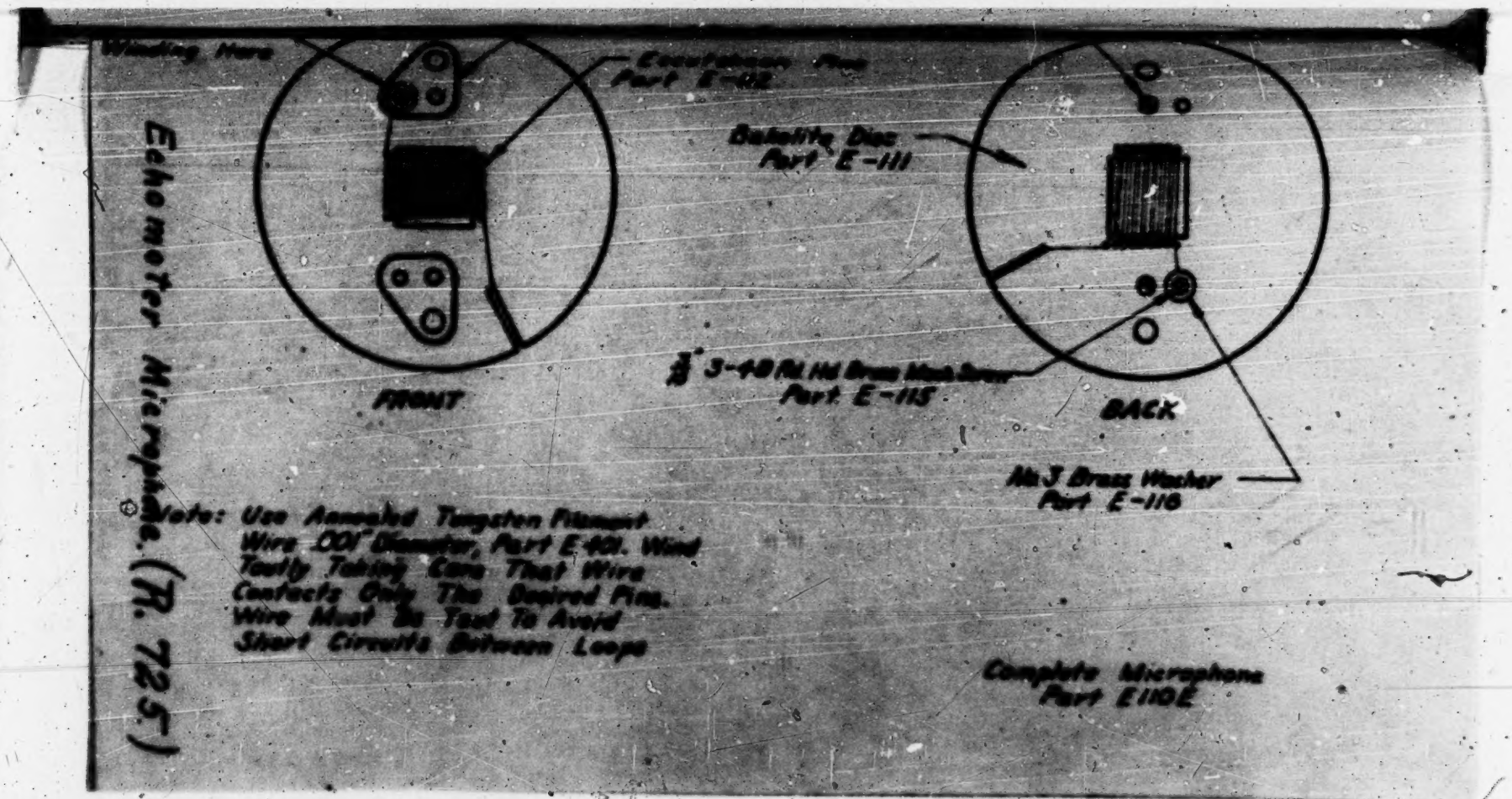
*Jakosky had the right to work out another system for locating fluid levels by the use of echoes.

"All others have an equal right to make improved machines, provided they do not embody the same or substantially the same devices or combination of devices, which constitute the peculiar characteristic of the previous invention.* * *

"But it has been argued, that though not a colorable *invasion* of the pantentee's claim, it is an *evasion* of his patent, which is equally injurious. If so, it is '*damnum absque injuria.*' Every man has a right to make an improvement in a machine, and evade a previous patent, provided he does not invade the rights of the patentee."
Burr v. Duryee, 68 U. S. 531, 17 L. Ed. 650, 658, 659.



Echometer Microphone. (R. 725.)

W. S. TUCKER.

SOUND DETECTING DEVICE.

APPLICATION FILED JAN. 6, 1919.

,351,356.

Patented Aug. 31, 1920.

4 SHEETS—SHEET 2.

Fig.3.

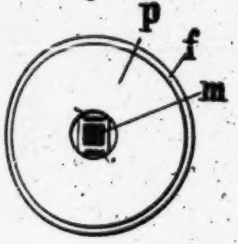


Fig.4.

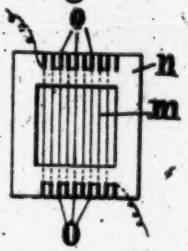


Fig.7.

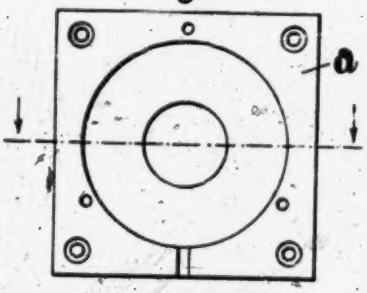


Fig.8.

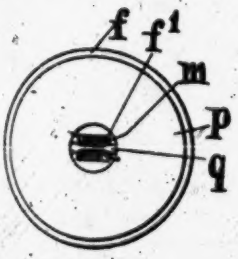


Fig.5.

Fig.6.

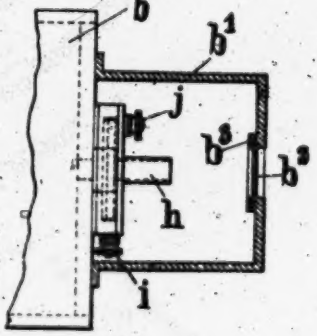


Fig.11.

Fig.9.

Fig.10.

Inventor
W. S. Tucker
By A. R. Kerslake
Atty

was a Major in the British Army and designed this microphone in 1918 to locate enemy gun positions (R. 387, 388, 926).

The Echo-Meter consists essentially of a gun using a .38 caliber blank revolver cartridge or a 10-gauge blank shot-gun shell (R. 288) mounted to discharge into a pipe connected to an oil well, and a Tucker hot-wire microphone to receive the echoes, the microphone being connected through a suitable amplifier, such as is commonly used in the radio art, to a recorder for making a record on a tape.* The technique and operation of the recording system are about the same as used by Tucker, except that Tucker used an acoustical resonator whereas the Echo-Meter does not. Some of Tucker's records appear in the Royal Society of Arts paper mentioned above (R. 927, 928, 930, 931). Commercial graphs made by Petitioner in the presence of Respondents (R. 280), are found in Exhibit D (R. 884). A graph made in court (R. 278) with a piece of hose simulating a well is found in Exhibit C (R. 883).

The Echo-Meter is used to locate obstructions and fluid levels in wells (R. 624). The records obtained show echoes from tubing collars, tubing catchers or other obstructions (R. 282, 285, 311, 313, 649). If the distance between tubing collars is known, or if the position of the tubing catcher is known, a comparison of echoes from

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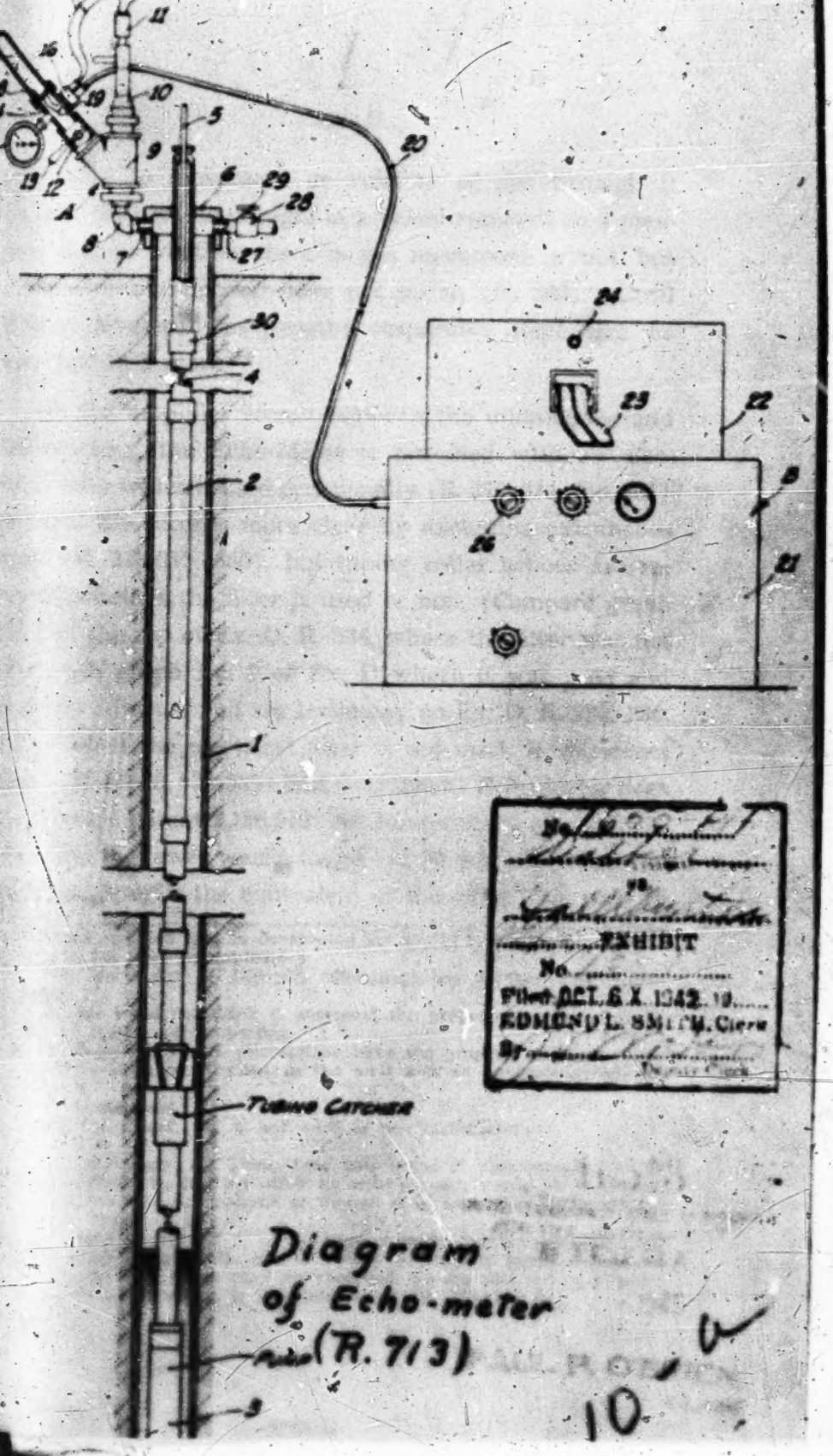
*The Echo-Meter is more fully described in the Field Manual (Ex 11-C, R. 719). Exhibits 12-B, 12-C and 12-D (R. 755-757) are photographs of Petitioner's device which was brought into court. The methods used in operating it are described by Cornes (R. 273 *et seq.*). See also Answers to Interrogatories (Exhibits 10, 11 and 12, R. 646, *et seq.*), particularly the Answer to Interrogatory 14, R. 653, and Exhibit 10-A, R. 713.

these known obstructions with the echo from the fluid level affords a basis for computing the distance to the unknown fluid level (R. 286, 287).

The Circuit Court of Appeals in its opinion (R. 1601) seems to assume, although it does not expressly state, that Petitioner's Echo-Meter produces the same result as that obtained by the patent in suit. While the records obtained with the Echo-Meter are used to determine fluid level, they are not the same as those obtained when using the apparatus of patent 2,156,519. The differences in result were fully explained at the trial by Walker (R. 173, 182, 183, 212, 213) by Dr. Mackeown (R. 341-343, 358, 361, 362, 365, 415), and by Cornes (R. 308, 309). The records are different because of the difference in structure of the devices, particularly the use of a hot-wire microphone instead of a diaphragm. The sketch (R. 781) shows the different kinds of records obtained by pressure and rarefaction waves with a "directional mike" or diaphragm, and a "non-directional mike," such as a hot-wire microphone (R. 212, 213). The diaphragm of the patent responds differently to positive and negative pulses, and because its "sensitivity of response" can be controlled (Patent 2,156,519, R. 593, Col. 1, *l.* 75), it makes a record on which each obstruction produces a "typical desired configuration" (*Idem*, R. 594, Col. 2, *l.* 24), so that one can "distinguish between echoes from different obstructions in the well" (*Idem*, R. 594, Col. 1, *ll.* 68, 69). All of the echoes recorded by Defendant's device are alike and are not distinguishable due to their configuration (R. 477-479). Defendant's microphone is not responsive to pressure (R. 341, 342, 343, 344, 358). It is



No. ....
vs.
....
EXHIBIT
No. ....
Filed OCT. 6 X. 1942. 19....
EDMUND L. SMITH, Clerk
By ....

Diagram
of Echo-meter
(R. 713)

10

responsive to movement or velocity of gas through it (R. 346, 658). A diaphragm in a vessel responds to a pressure change whether there is gas movement or not, but a hot-wire microphone does not do so (R. 360). Until Walker developed his pressure responsive diaphragm, he was "lost in a maze."*

In the amplifier circuit between the microphone and the recorder, the Echo-Meter is provided with an electrical filter which is used occasionally (R. 277, 314, 650, 651) to make the records more clear by excluding extraneous noise (R. 313-315, 650), but tubing collar echoes are recorded whether the filter is used or not. (Compare graph No. 1 at the top of Ex. D, R. 884, where the filter was not used with graph No. 2 of Ex. D where it was used and properly adjusted and see testimony on Ex. D, R. 282, 286, 287). When the electrical filter is not used, Respondents admit (R. 57, 58, 533-537) that Petitioner's Echo-Meter does not infringe patent 2,156,519, but Respondents contend (R. 534), and the lower courts found (R. 30, 31, 1603) that the electrical filter is the equivalent of the adjustable pipe 18

*Walker testified that in developing his device he discarded the idea of using a hot wire microphone.

"Mr. Mattingly: Q. Did you attempt to use the hot wire microphone?

"A. No, I did not think it possessed the proper characteristics. It had no directional properties. * * *

"Q. Does a hot wire microphone have the property of distinguishing between a constriction in the well and an enlargement in the well?

"A. It does not. * * *

"By the Court: Q. A hot wire is not (satisfactory)?

"A. It is not. * * *

"Mr. Mattingly: Q. Then these two types of obstructions, one of which constricts, and the other an enlargement; would be registered by the hot-wire microphone as though they were both constrictions, is that right?

"A. That is right. * * *. We have a large number of reflections from many of the wells, and if we are not able to identify those by the direction in which they are recorded, we are just lost in a maze; we don't know which is the fluid level" (R. 173-176).

of patent 2,156,519, and that claims 1, 13, 14, 15, and 17 of the patent define an electrical filter in calling for "means for tuning," etc.

Thus the holding of infringement of patent 2,156,519 is based on Petitioner's use of an electric filter in its Echo-Meter. A filter in an amplifying circuit is a common electrical expedient (R. 399, 651). It is an electrical device which controls the response of an amplifier (R. 350, 351) to eliminate extraneous noises. The filter contains resistance (R. 350) adjustable to reduce the gain in the amplifier of certain unwanted frequencies (R. 351, 363, 456). (See circuit diagram R. 734.)

Although the lower courts have held (R. 30, 1603) that a filter is the equivalent of an acoustical tuning device, there is no evidence whatever in the record supporting this holding. The uncontradicted expert testimony is that a filter is not even an electrical tuning device (R. 351, 356, 357). But electrical tuning devices are also old in the art. In fact, they are much older than filters (R. 352). In *Marconi Wireless Telegraph Co.* v. *United States*, 320 U. S. 1, 17, 30, 87 L. Ed. 1731, 1741, 1748, this Court found electrical tuning devices to be old in 1902. Filters were not developed until about 1916, but they had become quite common long prior to Walker (R. 352).*

*Dr. Mackeown testified:

"Resonant circuits are extremely old. The theory was first worked out by Lord Kelvin about 1850. A filter circuit is relatively new, and was first worked out by Dr. Campbell of the Bell Telephone Laboratories in 1916. They have been used very extensively by the Bell Telephone Company and make possible a communication of ten or twenty telephone communications over two wires, so that each party can communicate, and not be heard by the rest. That is entirely done by a filter. They are entirely different from the resonant or tuned circuits, which cannot be operated that way." (R. 352).

Filters had commonly been used in connection with amplifiers in electrical sound detecting systems. The patent to Williams No. 1,671,262 (R. 1089), granted May 29, 1928, shows a filter at 50 (R. 1090). The Williams patent states (R. 1092, *ll.* 21-25) that:

> "The present system while sensitive to very weak noises and signals is practically free from disturbances of the former, after the signals have been *filtered* and amplified."

Walker testified (R. 156) that in 1935 he decided to "take on the job of developing apparatus for the practice of the Lehr and Wyatt method." He investigated "devices on the market, microphones, amplifiers and electrical recording devices (R. 156, 157). The amplifier he purchased had a filter built into it. Walker testified:

A. "The amplifier that I used in making the records that have been submitted in evidence had a filter on it, a tone control, it is called in the ordinary radio outfit. This was used, I understand it, for recording heart beats and had a filter on it which I used in my experiments, but it did not have much effect.

Q. What date are you referring to?

A. I am referring to experiments in the early part of November.

Q. What year?

A. 1935; November 13th to along towards the latter part of the month.

Q. That apparatus, was that an apparatus that had a microphone and an oscillograph in this recording circuit with the amplifier?

A. That is correct.

Q. That filter was a low pass, a low frequency filter; it was not a resonant tuned circuit, was it?

A. I do not know, Mr. Babcock, just what type of filter it was.

Q. Was it the type of filter that is shown and described in your patent application, now offered as defendant's Exhibit L.

A. I have just testified that I did not know what type it was. I did not make a very close examination of it, so I therefore can't make any comparison between the two." (R. 516).

Anyone skilled in the art, in attempting to build apparatus in accordance with figure 2 of the Lehr and Wyatt patent would just as naturally have selected such an amplifier. The Lehr and Wyatt patent states that an amplifier may be used. It does not specify what kind of amplifier, but one skilled in the art would certainly know enough to purchase an amplifier "on the market."

We submit that the Wyatt and Lehr patent *per se* teaches the use of a filter in the amplifier of an electrical recording system. If this patent alone is not sufficient to teach this, then the other prior art, such as the Williams patent, shows there is no invention in such use. If the claims of the Walker patent in suit are so broad as to cover such use, they should be declared invalid. As will be shown presently, the Examiner in the Patent Office in charge of the art of Electric Signaling, refused to grant claims to Walker on exactly this combination.

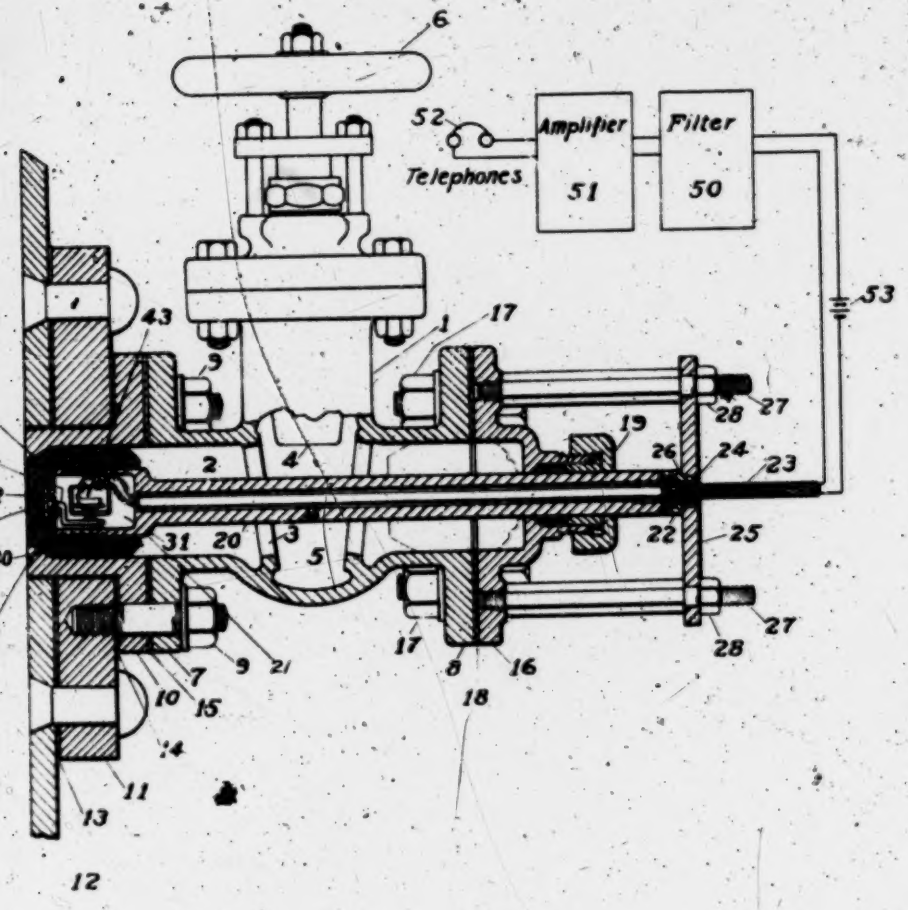
y 29, 1928.

1,671,262

R. L. WILLIAMS

SUBMARINE SOUND RECEPTION

Filed April 2, 1925



INVENTOR.

ROBERT L. WILLIAMS

BY Ezekiel Wolf

Analysis of the Claims in Suit

Claims 1, 13, 14, 15, and 17 of patent 2,156,519 are in suit. These claims use different language, but all are similar in construction, so only claim 1 will be analyzed specifically. In the introductory part, this claim (R. 596) calls for apparatus for determining the location of an obstruction in a well having a string of assembled tubing sections therein interconnected with each other by coupling collars. The Lehr and Wyatt patent (R. 1101) shows an oil well with tubing 8 therein. The Lehr and Wyatt device was used in wells having tubing therein and the tubing had collars (R. 271). Therefore, there is no novelty defined in this part of the claim. The claim then calls for "means for creating a pressure impulse in the well." This is the same device as that of the Lehr and Wyatt patent—a pressure impulse chamber and valve.* The claim further calls for "echo receiving means including a pressure responsive device exposed to said well for receiving pressure impulses from the well." The pressure responsive device is the diaphragm 23 and associated parts. There is no dia-

*The patent excludes the use of a gun by calling for an arrangement by which pressure pulses can be adjusted and by making a distinction between sound methods and pressure impulse methods. See testimony of Dr. Mackeown (R. 470-471). In setting forth the objects of the invention (R. 591), a careful distinction is made in the patent between the use of low energy sound waves and high intensity impulses produced by the Lehr and Wyatt pressure chamber. Respondents cannot now turn around and say that the use of sound waves as taught by Batcheller is an infringement of the claims. *Weber Electric Co.* v. *Freeman Electric Co.*, 256 U. S. 668, 65 L. Ed. 1162. Such expansion of claims is "an evasion of the law." *White* v. *Dunbar*, 119 U. S. 47, 30 L. Ed. 303, 305.

phragm in the Lehr and Wyatt patent, but there is no invention in its use instead of a microphone, because Batcheller (R. 1065) shows a diaphragm.*

The final clause of the claim defines the only element alleged to be novelty, and the only element found by the courts below to be novel (R. 29, 1599, 1600). It calls for "means associated with said pressure responsive device for tuning said receiving means to the frequency of echoes from the tubing collars." *The entire novelty of the alleged invention is defined simply as "means" for accomplishing the desired function.* What this "means" is, how it operates, or how it co-operates with the other parts of the apparatus is not defined. Walker has added a resonance pipe to the Lehr and Wyatt system, but he seeks a monopoly on all means for tuning a receiver in such system.

The other claims in suit use the same kind of language to define the alleged novelty. The clause of claim 13 (R. 597) which is supposed to define invention over the Lehr and Wyatt patent reads: "means associated with said receiving and registering means to accent the registration of tubing coupling echoes." The word "accent" does not even appear in the specification. Claim 14 (R. 598) defines the allegedly novel structure as "interference eliminating means." This phrase does not appear in the specification. The claim recites that this "means" is to limit the response of the receiver to echoes from "actual" obstructions. The significance of the word "actual," is not explained in the

*If the claim is interpreted to limit this phase to definition of a diaphragm, together with the particular mounting for the diaphragm as we think was intended by Walker when it was drawn, then clearly there is no infringement, for Petitioner, like Wyatt and Lehr, uses a microphone.

specification. The claim does not define structure for eliminating the recording of all other than actual obstructions. It merely calls for "means" for doing so. Likewise, claim 15 (R. 598) defines the alleged novelty over Lehr and Wyatt as "resonance means * * * to produce therein a natural acoustical period of oscillation," and claim 17 (R. 598) calls for "means having a natural frequency of oscillation * * * to accent" echoes from "couplings and other obstructions." The word "resonance" does not appear anywhere in the specification, nor does the phrase "natural acoustical period of oscillation."

All of these phrases no doubt refer to the pipe 18 of adjustable length connecting the receiver to the well casing. There is no basis for assuming that in drawing these claims Walker intended to cover the use of an electrical filter in the Lehr & Wyatt recorder or that the Patent Office intended to grant Walker a monopoly on such use. Claim 15 of patent 2,156,519 (R. 598), for example, shows that there was no such intention. The claim employs both the word "resonance" and the word "acoustical" to describe the "means." The word "resonance," while used in electricity to define intensification of a particular frequency, is more commonly used to define intensification of sound. The word "acoustical" is not an electrical term at all.* Acoustics is "the science of sound, including its production, transmission and effects." *(Webster's New International Dictionary,* 2nd Ed., 1938)

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*"The Court: When you say 'experimenting with acoustical tuning,' you mean mechanical tuning? A. Mechanical tuning, that's right, your Honor." Walker (R. 517).

Dr. Mackeown, professor of electrical engineering in the California Institute of Technology and in charge of the work there in radio, sound recording, electronics, etc. (R. 327), testified that an electrical filter is not a tuning device (R. 446, 447), is not resonant, even electrically (R. 362, 363, 364, 446), does not have a "natural frequency of oscillation" (R. 362, 457, 458) and does not amplify (R. 363, 364). It does not operate on the same principle as an electrical tuning device (R. 363, 364) and has nothing in common with a tuned pipe (R. 350, 353, 356). There is not one word of testimony anywhere in the record in contradiction of Dr. Mackeown's statements; nor is there one word of testimony anywhere in the record in contradiction of his testimony that an electrical filter has an entirely different mode of operation than an acoustically tuned pipe (R. 356). The Circuit Court of Appeals, in holding (R. 1603) that an acoustically tuned pipe is the equivalent of an electrical filter, quoted (R. 1603) statements of the Patent Office Examiner. We submit that consideration of the Examiner's statements for this purpose was improper. Proceedings in the Patent Office cannot properly be used to expand the claims of a patent. They can be used only to limit the claims. *Dwight & Lloyd Sintering Co.* v. *Greenawalt*, 27 Fed. (2d) 823, 832, (C. C. A. 2).

> "Under the statute it is the claims of the patent which define the invention."
>
> —*Altoona Pub. Theatres* v. *Am. Tri-Ergon Corp.*, 294 U. S. 477, 487, 79 L. Ed. 1005, 1012.

The quoted statements of the Examiner were made in the copending application Serial No. 164,534 (Exhibit L, R. 953), after patent 2,156,519 had issued. The first part of the quotation in the Court's opinion was made March 29, 1941 (R. 1045-1047), and the quotation as to equivalency was made April 11, 1942 (R. 1056, 1060). Neither statement was made by the Examiner who issued patent 2,156,519. The statement as to equivalency was made after this suit had been filed and after counsel for Respondent had practically insisted that the Examiner make such a statement (See, for example, Walker's "Request for Further Explanation" of April 6, 1942. R. 1058, 1059). After patent 2,156,519 had issued, statements by an Examiner in another case are extrinsic and irrelevant on the question of the scope of the claims. Petitioner had no chance to cross-examine the Patent Office Examiner as to these statements. They are not sworn testimony and cannot properly be used to rebut the sworn testimony in this record. The statements were not made as an interpretation of the claims here in suit, but were made as an additional ground for refusing claims in application Serial No. 164,534. The statement as to equivalency was supported by an additional reference, a patent to Holland granted in 1924, showing electrical tuning. (See full statement of the Examiner, R. 1060). If the use of a filter was known, as this Examiner had previously stated (R. 1002), and if it is the equivalent of an acoustical tuned resonator, then Walker made no invention over Lehr and Wyatt in the first place.

Regardless of expert opinion, the patent grant itself precludes such broad interpretation. As has often been

said, a patent is a contract.* Consideration for the grant is the disclosure to the public of "some substantial innovation." *Sinclair and Carroll Co., Inc.* v. *Interchemical Corp.*, — U. S. —, case No. 656, October Term, 1944, decided May 21, 1945. There being no suggestion whatever in patent 2,156,519 of the use of an electrical filter, the specification and claims should not be construed to cover such use.

Disclosure of one device does not constitute consideration for a monopoly on an entirely different device.

> "The thing patented is the particular means devised by the inventor by which that result is attained, leaving it open to any other inventor to accomplish the same result by other means."
>
> —*Electric R. R. Signal Co.* v. *Hall Railway Signal Co.*, 114 U. S. 87, 29 L. Ed. 96, 99.

See also *Corning* v. *Burden*, 56 U. S. 252, 14 L. Ed. 683; *Fuller* v. *Yentzer*, 94 U. S. 288, 24 L. Ed. 103.

Proceedings in the Patent Office

Had Walker intended to have patent 2,156,519 cover the use of an electrical filter in the Lehr and Wyatt system, it would have been a simple matter to disclose that device in the specification. Walker had used an electrical filter in the echo recording system he had built to test out the Lehr

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*The specification and claims of a patent constitute the patent contract. *O. H. Jewell Filter Co.* v. *Jackson*, 140 Fed. 340 (C. C. A. 8); *Firestone Tire & Rubber Co.* v. *U. S. Rubber Co.*, 79 Fed. (2d) 948 (C. C. A. 8), (cert. den. 298 U. S. 679).

A patent is a contract between the inventor and the government and is subject to the same general rules of construction that apply to other contracts. When its terms are plain, and the intention of the parties clearly manifest therefrom, they must prevail. *Goodyear Dental Vulcanite Co.* v. *Davis*, 102 U. S. 222, 26 L. Ed. 149.

and Wyatt system in 1935 (R. 516). His conception of the idea of using an acoustical tuned pipe did not take place until March 6, 1937 (R. 196). Instead of making disclosure of electrical means in the application for patent 2,156,519, he filed a separate application on the electrical system with an electrical filter "for tuning" the electrical circuit to cause it to "respond more readily to echoes from selected obstructions" in the well, (quoting from claim 15, R. 982), this application being Serial No. 164,534 (Exhibit L, R. 954). This application was filed September 18, 1937, only eleven days after application for patent 2,156,519 was filed.

The two applications were handled by different Examiners in the Patent Office. The application for the patent in suit went to Division 5, Class 181-0.5 (R. 1416), "Acoustics, Miscellaneous." Apparently, the Examiner in Division 5 made no search in the electrical signaling art. Neither the Tucker patent* (R. 1077) showing the acoustical resonator, nor the Williams patent (R. 1089) showing an electrical sound detecting system having a filter connected to an amplifier, nor any similar prior art, was cited.

The co-pending application Exhibit L, on the other hand, was examined in Division 42, Class 177 (R. 990), "Electric Signaling."

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*The Circuit Court of Appeals, in its opinion, stated (R. 1600):

"The Tucker patent mentioned was among the examples of the prior art cited by the Examiner."

The Court was in error. The Tucker patent was not cited. The only prior patents cited were Batcheller 602,422, Taylor 1,847,336, and Lehr and Wyatt 2,047,974. See rejections (R. 1464, 1482).

The co-pending application contained the following claim:

> "15. In a system for receiving and translating pressure echoes for various obstructions in a well, pressure responsive means coupled to the well to be exposed to pressure variations therein, electrical means actuated by said pressure responsive means to vary electrical values in accordance with the variations of pressure received by said pressure responsive means, translating means for receiving said electrical variations and for describing an observable wave pattern corresponding to the patterns of the echo waves, and means interposed between said pressure responsive means and said translating means for tuning said electrical means to respond more readily to echoes from selected obstructions than to pressure variations emanating from other sources." (R. 982)

Had the Patent Office intended to grant Walker a monopoly on a system having an electrical recorder with electric tuning, this claim would have been allowed. Instead of allowing it, on April 5, 1939, which was prior to the issuance of patent 2,156,519, the Patent Office Examiner in Division 42 rejected this claim on the prior art.* The Examiner's rejection included the following:

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*In its Petition for the Writ of Certiorari herein, page 3, Petitioner stated that claim 15 (R. 982) of the co-pending application Serial No. 164,534, was rejected (R. 1002) as involving no invention over the prior art and canceled (R. 1003). Respondents, in their Brief in Opposition to the Granting of the Writ, page 11, stated:

"What petitioner fails to say is that in the instant case, *there was no prior art upon which the electrical claims could be rejected* except Walker's own patent in suit." (Italics theirs).

Respondents' statement is not true. Claim 15 of application 164,534 was rejected on the prior Lehr and Wyatt patent in view of a prior patent to Rieber (R. 1000) and again on the Lehr and Wyatt patent alone (R. 1002). It was never rejected on the Walker patent in suit. The patent in suit had not yet issued when these rejections were made.

"Claim 15 is further rejected on Lehr *et al* alone. This claim differs from the reference only in the inclusion of a filter. But it is not invention broadly to use a filter wherever a filter is desirable" (R. 1002).

In response to this rejection, Walker cancelled claim 15 (R. 1003).

This cancelled and abandoned claim 15 reads squarely upon Petitioner's Echo-Meter, if the interpretation of the terms of the claims in suit by the Circuit Court of Appeals is correct. The "pressure responsive means" is the Y-pipe, the housing and the microphone coupled to the well. The "electrical means actuated by said pressure responsive means" is the amplifier. The "translating means" is the electrical recorder. The "means for tuning" is the filter.

Unless the decision of the Circuit Court of Appeals is modified, Petitioner will be enjoined from doing the thing that the Patent Office records show is permissible as outside the scope of the monopoly the Patent Office intended to grant Walker.

The file wrapper of patent 2,156,519 itself (Exhibit T, R. 1415) shows that there was no intention on Walker's part, or on the part of the Patent Office, to cover anything electrical in the claims.

The rejections (R. 1464, 1482) by the Examiner were chiefly based on the prior patents to Batcheller and Lehr and Wyatt. Counsel interviewed the Examiner several times (See reference to the interviews, R. 1498, 1512, 1531),

and argued extensively (R. 1498-1535) that invention was involved in the Walker system because it made records by which echoes from different obstructions were "distinguishable" (R. 1500). It was argued that the prior art devices were incapable of doing so (R. 1503, 1504).

The claims here in suit (R. 596-598) are claims 1, 13, 14, 15 and 17. These were presented late in the prosecution of the application. They were originally numbered 52 (R. 1496), 58 (R. 1528), 59 (R. 1529), 60 (R. 1529), and 62 (R. 1530), respectively. All were added by amendment after the rejections of earlier claims on Batcheller and Lehr and Wyatt. The claims here in suit define one of the elements as a "pressure responsive device," or a similar term. According to the specification (R. 592, Col. 1, *ll.* 26-28) the "pressure responsive device" is the apparatus shown in Figure 5 (R. 590). It includes the diaphragm 23 and the associated housing and other parts. Page 4 of the specification (R. 594, Col. 1, *l.* 63 *et seq.*) describes how this apparatus may be adjusted to vary the sensitivity of the diaphragm 23 and thus "distinguish between echoes from different obstructions in the well" (R. 594, Col. 1, *ll.* 68, 69). The prior patents to Batcheller, while it had a diaphragm, did not disclose a pressure responsive device capable of being adjusted to accomplish this function. (See argument of counsel R. 1476, 1477).

Original claim 20 (R. 1451) did not include a "pressure responsive device." This claim was cancelled and claim 53 (R. 1497), which called for a "pressure responsive device" was substituted therefor. Claim 53 in turn

was cancelled (R. 1528) when claims 58 to 62 were added, these being re-numbered 13 to 17 when the patent issued. It is clear therefore that this phrase as used in the claims defines something more than the simple diaphragm of Batcheller or an ordinary microphone such as disclosed in the Lehr and Wyatt patent. Only by ignoring the file wrapper can the phrase "pressure responsive device" be construed to define a hot-wire microphone. By adjusting Respondents' "pressure responsive device," slow or gradual changes in pressure can be recorded. A slow change in pressure would have no perceptible effect on an Echo-Meter record (R. 360). The hot-wire microphone responds only to a quick change in velocity—a "steep-front sound wave" (R. 623) such as that created by a gun shot.

In another respect, the file wrapper (Exhibit T, R. 1415) of the patent in suit imposes limitations in the claims in suit.

Broad claims (such as original claim 27, R. 1454), not limited to tuning had been rejected (R. 1464) on Batcheller (R. 1065), and cancelled (R. 1466). In presenting claims 52, 58, 59, 60 and 62 (claims 1, 13, 14, 15 and 17 of the patent), it was represented to the Patent Office that the language of claim 58 specifies "all of the necessary elements for accomplishing the result of producing the echoes from the tubing collars which are distinguishable from each other" (R. 1532); that "claim 59 recites the same structure in more limited terms, specifying that this means or mechanism for permitting the distinguishable registration of the tubing collar echoes is an 'interference eliminating

means' * * * as specified on page 20 of the original specification" (R. 1533); that "claim 60 defines the same subject but limits the mechanism to a resonance means, which produces a natural acoustical period of oscillation" (R. 1533), that claim 62 is directed to the feature "which has the peculiar characteristic that it has the natural frequency of oscillation which will result in the accenting of tubing collar echoes" (R. 1533), and claim 52 (claim 1 of the patent) was classed with claims specific to an adjustable pipe, counsel stating:

> "Upon review of Claims 24, 25 and 26, it is believed that these claims are rendered more accurate and definite by employing the word 'effective' to *define the adjustment of the length of the pipe or other coupling means employed to tune the receiving means to the tubing collar echoes.** This amendment does not change the subject matter defined by these claims and it is believed that each of them is clearly allowable over the references of record.
>
> "Claims 52 and 57 are likewise directed to *this same subject matter* but expresses the invention in somewhat different terms. Again, however, these claims are directed to the feature of producing distinguishable tubing collar echoes and are believed to be clearly patentable over the references of record." (R. 1533, 1534).

The Court may properly consider "what the patentee said when he was making his application" to determine whether "the construction of the patent is confirmed by the avowed understanding of the patentee expressed by

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*Throughout this brief where italics appear in quotations, the emphasis has been supplied by us unless otherwise indicated.

im, or on his (be)half, when his application for the orig-
nal patent was pending." *Goodyear Dental Vulcanite Co.* v.
Davis, 102 U. S. 222, 26 L. Ed. 149, 150.

If the file wrappers (Exhibit T, R. 1415 and Exhibit L,
. 953) are considered, it becomes clear that the patent in
uit is directed to a system quite different from Petitioner's
Echo-Meter.

It was old in the art to shoot a gun and record the
cho with a diaphragm recorder (Batcheller, No. 602,422,
. 1065). It was old in the art to create a pressure impulse
n a well by allowing gas to enter from a pressure cylinder
nd record the echo with a microphone, amplifier and
lectrical recorder (Lehr, No. 2,047,974, R. 1101). From
he prior art, Walker selected the pressure cylinder of Lehr
nd the diaphragm recorder of Batcheller, and added an
djustable pipe to tune the recorder. Petitioner went just
he other way. It selected the gun of Batcheller, the micro-
hone of Tucker, and used the conventional electrical am-
lifier and recorder, such as disclosed in the Lehr patent
nd used by the Union Oil Company long before that.
Where such differences exist between the structure of a
atent, and the structure of the accused device, no in-
ringement exists. *Electric R. R. Signal Co.* v. *Hall Railway*
ignal Co., 114 U. S. 87, 29 L. Ed. 96.

SUMMARY OF ARGUMENT

The claims in suit are invalid.

The Circuit Court of Appeals for the Ninth Circuit, by ruling that "means * * * for tuning * * *" in Claim 1 and like functional statements in Claims 13, 14, 15 and 17 of Patent 2,156,519 define the only novel element in the claims "with sufficient distinctness and clarity to comply with the statute" (R. 1600), has rendered a decision in direct conflict with the decision of this Court in *General Electric Co. v. Wabash Appliance Corp.*, 304 U. S. 364, 82 L. Ed. 1402. The claims do not meet the requirements of R. S. Sec. 4888.

The claims in suit are not infringed.

The Circuit Court of Appeals for the Ninth Circuit, by ignoring the rejection, cancellation and abandonment of a claim in a co-pending application for patent, has so construed the claims in suit as to cause them to cover subject matter refused Respondents by the Patent Office and has imposed undue restrictions on the rules governing the construction of claims set forth in *Schriber-Schroth Co. v. Cleveland Trust Co.*, 311 U. S. 211, 220, 221, 85 L. Ed. 132, 137, 138. Respondents are estopped from asserting title to the abandoned subject matter.

Conclusion

Respondents seek a monopoly on apparatus entirely different than that disclosed or intended to be covered by the patent grant. The claims of the patent should be held invalid because broader than the invention. If valid, they should be held not infringed by apparatus different from that disclosed in the patent.

ARGUMENT

The claims in suit are invalid.

The requisites for definiteness in the specifications and claims of a patent are statutory. Section 4888 of the Revised Statutes (U. S. C. title 35, sec. 33) requires that a patentee describe his invention in:

> "* * * such *clear, concise and exact terms* as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound and use the same; and in the case of a machine, he shall *explain the principle thereof,* and the best mode in which he has contemplated applying that principle, so as to *distinguish it from other inventions;* and he shall *particularly point out and distinctly claim* the part, improvement or combination which he claims as his invention or discovery."

> "It seems to us that nothing can be more just and fair both to the patentee and to the public, than that the former should understand and correctly describe just what he has invented, and for what he claims a patent."
>
> —*Merrill* v. *Yoemans,* 94 U. S. 568, 24 L. Ed. 235, 237.

> "The statute requires the patentee not only to explain the principle of his apparatus and to describe it in such terms that any person skilled in the art to which it appertains may construct and use it after the expiration of the patent, but also to inform the public during the life of the patent of the limits of the mon-

opoly asserted, so that it may be known which features may be safely used or manufactured without a license and which may not."

—*Permutit Co.* v. *Graver Corp.*, 284 U. S. 52, 60, 76 L. Ed. 163, 167.

"The courts in determing the questions of invention and infringement brought to them by respondent, no less than the parties-litigant, need and may insist upon the precision enjoined by the statute."

—*United Carbon Co.* v. *Binney & Smith Co.*, 317 U. S. 228, 232, 87 L. Ed. 232, 235.

The Circuit Court of Appeals seems to have set up a rule for testing the definiteness of claims to a combination different from that applicable to claims for a single element or specific product. In denying the petition for rehearing, the Court stated:

"In its petition for rehearing appellant, Halliburton Oil Well Cementing Company, assumes that the court in ruling on Walker's patent No. 2,156,519 failed to consider the cases of *General Electric Co.* v. *Wabash Appliance Corp.*, 304 U. S. 364, and *Davis Sewing Mach. Co.* v. *New Departure Mfg. Co.*, 217 Fed. 775, particularly the first of these decisions. Halliburton is mistaken. In the General Electric case the claim considered was not one for a combination of elements, but a claim for a single element. Here, the claims are for a combination of elements." (R. 1614)

In his concurring opinion denying rehearing, Judge Denman stated:

"No case is cited in which such a combination of means alone has been sought and the case seems of novel import." (R. 1615)

We believe there is no previous authority for the distinction made by the Court. Certainly the statute does not authorize such a distinction. In fact, the statute seems to require even greater particularity in a patent on a machine than in a patent on one of the other three classes of inventions listed as patentable in R. S. 4886, (U. S. C. title 35, sec. 31), for R. S. 4888 mentions it specially, stating:

"and in the case of a machine, he shall explain the principle thereof, and the best mode in which he has contemplated applying the principle, so as to distinguish it from other inventions."

"The term 'machine' includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result."

—*Corning et al*, v. *Burden*, 56 U. S. 252, 267, 14. L. Ed. 683, 690.

The claims involved in *General Electric Co.* v. *Wabash Appliance Corp.*, 304 U. S. 364, would not have been rendered more definite if they had called for a *combination* of the old parts of the lamp with the new filament instead of calling for "a filament *for* electric incandescent lamps."

Conversely, there is no real difference between the claims in the present case for a *combination* of parts of the old Lehr and Wyatt device with means for tuning one part, and a claim directed merely to means *for* tuning the receiver of the Lehr and Wyatt device.

The requirements for definiteness should not be evaded by reciting inconsequential matter in a claim. All Walker has added to the Lehr and Wyatt system is the acoustically tuned pipe. This does not affect the "means communicating with said well for creating a pressure impulse in said well" (referred to as element B by Judge Denman, R. 1615).

> "The improvement of one part of an old combination gives no right to claim that improvement in combination with other old parts which perform no new function in the combination."
>
> —*Lincoln Engineering Co.* v. *Stewart-Warner Corp.*, 303, U. S. 545, 549, 550, 82 L. Ed. 1008, 1010.

If there is a difference of any importance between the form of the claims in the Walker patent in suit and those condemned in *General Electric Co.* v. *Wabash Appliance Corp.*, it is a difference which brings the claims in suit squarely within the ruling in *Lincoln Engineering Co.* v. *Stewart-Warner Corp.* The claims are to an old combination.

But the use of the word "means" to define the novel element in combination claims does not raise a question of novel import. In 1907, in the case of *Tyden* v. *Ohio Table Co.*, 152 Fed. 183, the Circuit Court of Appeals for the Sixth Circuit had before it a patent on a pedestal table. Claim 1 of the patent was for a combination of elements. The parts of the table were set forth in some detail, but the novel element was defined only by the word "means" followed

by a recital of functions. The Court, speaking through Judge (afterwards Mr. Justice) Lurton, held that the claim was too broad, stating:

> "It claims all means for locking and holding the pedestals and is substantially a claim for a function. It cannot be upheld and must be held void."

Later, the rule of *Tyden* v. *Ohio Table Co.*, was again considered by the Circuit Court of Appeals for the Sixth Circuit. In *Davis Sewing Machine Co.* v. *New Departure Mfg. Co.*, 217 Fed. 775, combination claims, which used the word *"mechanism"* instead of *"means"* to define certain elements, were under consideration. It was held that such broad terms were not objectionable where used in the claim to define other than the novel element, but the soundness of the decision in *Tyden* v. *Ohio Table Co.*, was not questioned where the functional clause was used to define the exact point of novelty. The opinion by Judge Denison states:

> "Reliance is also placed upon the opinion of this Court, speaking by Judge (afterwards Mr. Justice) Lurton, in *Tyden* v. *Ohio Table Co.*, 152 Fed. 183, 81 C. C. A. 425. In this case, the claim calling for 'means' was held invalid because it covered all means for accomplishing the result, and so was functional. We do not question the application of the rule as made to the facts of that case; but we do not understand that a claim is functional and invalid merely because one of its specified elements is 'means,' as in the Tyden Case, or 'mechanism,' as in the present case. This result may or may not follow, depending upon whether the all-inclusive term is used with reference to the ele-

ment or subcombination which is *the real point and gist of the invention*, or *whether it is used with reference to elements or parts of the combination already well known* and designed only to co-operate with the new element in order to make a completely operative unit. In other words, *where used with reference to the exact point of novelty*, 'means' or 'mechanism' *may expose the claim to attack* on the ground that it is functional; in that respect, each case will present a problem by itself. But where used with reference to the make-up of the field in which the real invention finds its usefulness or with reference to the connecting parts which permit the salient novelty of the invention to accomplish its function, these words are only a convenient formula of the broadest equivalency of which the real invention permits."

(217 Fed. at 782-783).

The rule of *Davis Sewing Mach. Co.* v. *New Departure Mfg. Co.* has been cited with approval in many later cases. In some cases, as in *White Tool and Supply Co.* v. *Air Reduction Co.*, 48 Fed. (2d) 720, (C. C. A. 6); *Buono* v. *Yankee Maid Dress Corp.*, 77 Fed. (2d) 274, (C. C. A. 2); and *General Tire and Rubber Co.* v. *Fisk Rubber Corp.*, 104 Fed. (2d) 740, (C. C. A. 6), it has been cited to show that the use of the word "means" in a combination claim to define *other than the exact point of novelty* does not render the claim functional or invalid. In other cases, as in *Heidbrink* v. *Hardessen Co.*, 25 Fed. (2d) 8, (C. C. A. 7); *In re Tucker*, 46 Fed. (2d) 214, (C. C. P. A.); *In re Ferguson*, 83 Fed. (2d) 693 (C. C. P. A.); and *In re Spitzglass*, 96 Fed. (2d) 1002 (C. C. P. A.); it has been cited to show that the word "means" renders a claim functional

where it is directed to the novel element. In still other cases, such as *Hollingshead Co.* v. *Bassick Mfg. Co.*, 73 Fed. (2d) 543 (C. C. A. 6); *Firestone Tire and Rubber Co.* v. *United States Rubber Co.*, 79 Fed. (2d) 948 (C. C. A. 6) (Cert. denied 298 U. S. 679), it has been cited in support of a holding of non-infringement, the word "means" in combination claims being held to cover only the actual means described in the specification.

The soundness of the rule of the *Davis Sewing Machine* case has never been questioned. *Walker on Patents* (Deller's Ed.) Vol. 2, page 790, cites no other case under the heading, "Use of 'means' or 'mechanism,' etc., in claims," the author stating:

> "The interpretation to be given to such words as 'means,' 'mechanism,' etc., when used in claims, was fully discussed in *Davis Sewing Mach. Co.* v. *New Departure Mfg. Co.*, 217 Fed. 775, 782-784, C. C. A. 6 (1914), by Judge Denison. Because of the comprehensive nature of the discussion, the opinion is quoted in full:"

In *General Electric Co.* v. *Wabash Appliance Corp.*, 304 U. S. 364, this Court cited the *Davis Sewing Machine* case in support of a ruling condemning the use of conveniently functional language at the exact point of novelty in a claim. This Court, speaking through Mr. Justice Reed, said:

> "The claim uses indeterminate adjectives which describe the functions of the grains to the exclusion of any structural definition, and thus falls within the condemnation of the doctrine that a patentee may not broaden his product claims by describing the product

in terms of function. (*Holland Furniture Co.* v. *Perkins Glue Co.*, 277 U. S. 245, 256-258, 72 L. Ed. 868, 872, 873, 48 S. Ct. 474, and cases cited). Claim 25 vividly illustrates the vice of a description in terms of function. 'As a description of the invention it is insufficient and if allowed would extend the monopoly beyond the invention.' (277 U. S. at 258). The Court of Appeals for the Ninth Circuit relied on the fact that the description in the claims is not 'wholly' functional. 80 Fed. (2d) 958, 963. But the vice of a functional claim exists not only when a claim is 'wholly' functional, if that is ever true, but also when the inventor is painstaking when he recites what has already been seen, and then uses conveniently functional language at the exact point of novelty. [See *Gynex Corp.* v. *Dilex Institute*, (C. C. A. 2d), 85 Fed. (2d) 103, 105; *Davis Sewing Mach. Co.* v. *New Departure Co.*, (C. C. A. 6th), 217 Fed. 775, at 782]."

—304 U. S. at 371, 82 L. Ed. at 1406-1407.

Claim 1 (R. 596) of patent 2,156,519 here in suit defines the part found below to constitute invention as "means associated with said pressure responsive device for tuning said receiving means to the frequency of echoes from the tubing collars." Everything in the claim except the tuning means is admittedly old. The particularity with which the other elements are defined is not important. When the exact point of novelty is reached only the function is recited. The claim in effect says merely: I claim means for tuning the receiver of a known echo depth measuring system to the frequency of echoes from the tubing collars.

Likewise, claim 13 (R. 597) of patent 2,156,519 defines the novel element only as "means associated with said re-

ceiving and registering means to accent the registration of tubing coupling echoes." No structure whatever is recited —only the function of some undefined means. Likewise, claim 14 (R. 598) defines the novel element only as "interference eliminating means;" claim 15 (R. 598) defines it as "resonance means associated with said receiving and registering means to produce therein a natural acoustical period of oscillation;" and claim 17 (R. 598) defines it as "means having a natural frequency of oscillation so related to the frequency of the echoes from said tubing couplings as to accent the registration of said echoes."

No one reading these claims can tell what this "means" is. This "means" includes everything that can perform the function. Such claims fall squarely within the class of those condemned by this Court in the *General Electric Co.* v. *Wabash Appliance Corp.* case.

The indefiniteness of these claims is not cured by the specification. In *General Electric Co.* v. *Wabash Appliance Corp.*, the Court said further:

> "The product claims here involved cannot be validated by reference to the specification. Assuming that in a proper case a claim may be upheld by reference to the descriptive part of the specification in order to give definite content to elements stated in the claim in broad or functional terms, the specification of the Pacz patent does not attempt in any way to describe the filament, except by mention of its coarse-grained quality."
>
> —304 U. S. at 373, 82 L. Ed. at 1407.

In the same way, in the case at bar, the specification of patent 2,156,519 throws no light on the functional language of the claims. The following terms are not used in the specification: "means to accent," "interference eliminating means," "resonance means," "natural acoustical period of oscillation" or "natural frequency of oscillation."

In *General Electric Co. v. Wabash Appliance Corp.*, the Court said further:

> "The inventor must 'inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known which features may be safely used or manufactured without a license and which may not'."
>
> —304 U. S. at 369, 82 L. Ed. at 1405.

No one having only patent 2,156,519 before him is apprised that these claims cover an electrical filter in the Lehr and Wyatt electrical system. No electric recorder with or without a filter is either described or shown. An entirely different application for patent (Exhibit L, R. 953) was prosecuted by Walker on the electrical recorder. The all-inclusive, purely functional clauses on the only novel element in the claims in suit do not "particularly point out" the improvement, and the specification does not describe the improvement in "full, clear, concise and exact terms," as required by R. S. Sec. 4888, if the improvement consists in putting an electrical filter in the prior Lehr and Wyatt system.

The language of *Burr* v. *Duryee*, 68 U. S. 531, 17 L. Ed. 650, 657, 658, is applicable.

"A machine is a concrete thing, consisting of parts, or of certain devices and combination of devices. The principle of a machine is properly defined to be 'its mode of operation,' or that peculiar combination of devices which distinguishes it from other machines. A machine is not a principle or an idea. The use of ill defined abstract phraseology is the frequent source of error. It requires no great ingenuity to mystify a subject by the use of abstract terms of indefinite or equivocal meaning. Because the law requires a patentee to explain the mode of operation of his peculiar machine, which distinguishes it from others, it does not authorize a patent for a 'mode of operation as exhibited in a machine.' * * *

"No one who reads the two specifications, or inspects the two machines, can aver that they contain the same combination of mechanical devices, or substantially the same, to produce the desired effect. Not one of the devices or its equivalent, used in the one is to be found in the other, nor is its mode of operation the same. The argument used to show infringement assumes that every combination of devices in a machine which is used to produce the same effect, is necessarily an equivalent for any other combination used for the same purpose. This is a flagrant abuse of the term 'equivalent.' * * * In the case of *McCormick* v. *Talcott*, 61 U. S. 402, 15 L. Ed. 930, 931, we have said: 'If the invention claimed be itself but an improvement on a known machine by a mere change of form or combination of parts, the patentee cannot treat another as an infringer who has improved the original

machine by use of a different form, or combinations performing the same functions. The inventor of the first improvement cannot invoke the doctrine of equivalents to suppress all other improvements which are not colorable invasions of the first.'"

The claims in suit are not infringed.

To establish infringement, it must be shown that the accused device is the same as that of the patent in suit or the equivalent. *American Steel & Wire Co.* v. *Denning Wire & F. Co.*, 176 Fed. 564, 565, affirmed 194 Fed. 117, C. C. A. 8; *Union Water-Meter Co.* v. *Desper*, 101 U. S. 332, 25 L. Ed. 1024.

To be the equivalent, *three requirements must be met.* There must be (1) substantially the same means, (2) substantially the same operation and (3) substantially the same result. *Bates* v. *Coe*, 98 U. S. 31, 25 L. Ed. 68, 72; *Westinghouse* v. *Boyden Power Brake Co.*, 170 U. S. 537, 569, 42 L. Ed. 1136, 1148.

In the present case:

1. There is not the same means. For example, a hot-wire microphone is not the same as the diaphragm of the patent (R. 341, 342). One is electrical; the other is mechanical. One does not respond to pressure pulses; the other does (R. 346, 358, 361). There is no interchangeability (R. 347). Interchangeability is an important test of identity of means. *Miller* v. *Eagle Mfg. Co.*, 151 U. S. 186, 208, 38 L. Ed. 121, 131.

2. There is not the same operation. For example, Petitioner's means for eliminating extraneous noises from being recorded does not operate in the same way as Walker's tuning pipe (R. 356). The tuning pipe amplifies the sound waves before they affect the receiver in any way (R. 355). An electrical filter does not affect the sound waves (R. 349, 456, 656), but changes the characteristics of an electrical amplifier (R. 357) by decreasing undesirable electrical currents picked up by the microphone (R. 363, 456). The filter does not amplify (R. 315, 318, 363). It is not "resonant" (R. 351, 352, 363), does not have a "natural acoustical period of oscillation" (R. 317, 457), and does not "accent" (R. 363). The Court is not even called upon to decide whether an electrical tuning device is the equivalent of a mechanical tuning device, because a filter is not a tuning device (R. 351, 352, 356, 357, 447, 458). The filter and the acoustical tuner of the patent are "entirely different in their mode of operation" (R. 356). The principle of law applies, that where the *mode of operation* of the accused machine is substantially different from that of the patent, infringement cannot exist. *Field* v. *DeComeau*, 116 U. S. 187, 29 L. Ed. 596; *Yale Lock Mfg. Co.* v. *Sargent*, 117 U. S. 373, 29 L. Ed. 950; *Universal Oil Products Co.* v. *Globe Oil & Ref. Co.*, 322 U. S. 471, 485, 88 L. Ed. 1399, 1407.

> "If the device of the respondent shows a substantially different mode of operation, even though the result of the operation of the machine remains the same, infringement is avoided." *Cimiotti Unhairing Co.* v. *American Fur Ref. Co.*, 198 U. S. 399, 414, 49 L. Ed. 1100, 1107.

3. There is not the same result. The records obtained are not the same. Petitioner's Echo-Meter is incapable of distinguishing pressure impulses from rarefaction impulses (R. 309, 358). The system of the patent in suit responds differently to these different impulses and makes distinguishable records of them (R. 309). (See analysis, *supra*, page 24).

In discussing the question of infringement, the Circuit Court of Appeals said (R. 1601, 1602):

> "Halliburton's argument of non-infringement is based primarily on the indisputable fact that it uses an electrical apparatus, whereas Walker's is mechanical. *Where different means are used to accomplish the same end or to perform the same function, the question of infringement depends upon the mode of operation as well as on the sameness of the result.* Cf. Walker on Patents (Deller's Ed.) Vol. 3, pp. 1745, 1750. While identity of result is of course not a sufficient test of infringement, nevertheless an infringing device, generally speaking, is one which 'does the same work in substantially the same way and accomplishes substantially the same result.'* Walker on

*The quotation is from the text of Walker on Patents, Deller's Ed., Vol. 3, page 1751. The full statement of the textbook is:

"But if the mode of operation is substantially the same, it does not follow that the charge of infringement must be affirmed. *Diamond Drill & Mach. Co.* v. *Kelly Bros.*, 120 Fed. 289 (1903); *E. Van Noorden Co.* v. *Cheney Co.*, 75 Fed. (2d) 298, 300 (C. C. A. 1) 1934). In that case the question must be decided by some additional criterion. To establish a claim of infringement, the facts must be subjected to several successive tests. If the case fails on either of those tests, no further inquiry need be made; but an infringement cannot be affirmed till all those tests have been applied and have been withstood.

"The first of these is that which relates to identity of mode of operation. It is therefore important to know wherein this requisite identity consists. It may be said in general that an infringing device is one which does the same work in substantially the same way and accomplishes substantially the same result."

Patents (Deller's Ed.) Vol. 3, pp. 1707, 1751. The question is whether Halliburton's device is substantially the equivalent of Walker's. * * *

"A detailed comparison of the *mode of operation, function, and result* achieved by the respective devices with which we are here concerned would expand this opinion to undue lengths."

As we read the Court's opinion, it holds that equivalency may exist between quite different devices if they have the same mode of operation, function and result. This has not heretofore been the law. The established rule is that there is no equivalency unless, in addition to these tests, there is "substantially the same or similar means." *Westinghouse* v. *Boyden Power Brake Co.*, 170 U. S. 537, 569, 42 L. Ed. 1136, 1148. The pages of Deller's Edition of Walker on Patents, relied upon by the Court, do not support its ruling. On page 1707 of Walker, it is stated:

"Sec. 469. Tests of Equivalency. Identity of Result. Similarity or identity of result is not a sufficient test to show infringement, where there was a variation in the means used (*Stebler* v. *Porterville Citrus Assn.*, 248 Fed. 927, C. C. A. 9; *Conrader et al.* v. *Judson Governor Co.*, 238 Fed. 349), but infringement is not avoided by the impairment of the functions of an element of a patented device. (*Sundh Electric Co.* v. *Gen. Electric Co.*, 198 Fed. 116; *Murray* v. *Detroit Wire Spring Co.*, 206 Fed. 465, C. C. A. 6.)"

On page 1745 of Walker it is stated:

"Sec. 495. Tests of Infringement of Machine or Manufacture. Comparative Results and Mode of Op-

eration. The respective results of a machine or manufacture covered by the claim of a patent, and of a machine or manufacture alleged to infringe that claim, do not furnish a criterion by which to decide the question of infringement. [*Westinghouse* v. *Boyden Power-Brake Co.*, 170 U. S. 537 (1898).]" (Other cases cited.)

On page 1746 of Walker it is stated:

"Those results may be identical, while the mode of operation and the means by which the result is secured are different. (*Electric Signal Co.* v. *Hall Signal Co.*, 114 U. S. 87, 29 L. Ed. 96.)" (Other cases cited.)

"Any person may accomplish the result performed by a patented thing without infringing the patent, if he uses means substantially different from those of the patent. [*O'Reilly* v. *Morse*, 15 Howard (56 U. S.) 62 (1853).]" (Other cases cited.)

"To hold the contrary of this rule would be to retard and not to promote the progress of the useful arts. [*Smith* v. *Downing*, 1 Fish. 64, Fed. Cas. No. 13,036 (1850).]"

On pages 1747, 1748, 1749 and 1750 of Walker, it is stated:

"A test of infringement, where similarity of function and result are involved, was discussed in *Union Paper Bag Machine Company* v. *Murphy*, 97 U. S. 120, 125, 24 L. Ed. 935, where the court said: 'Except where form is of the essence of the invention, it has but little weight in the decision of such an issue, the correct rule being that, in determining the question of infringement, the court or jury, as the case may be,

are not to judge about similarities or differences by the names of things, but are to look at the machines or their several devices or elements in the light of what they do, or what office or function they perform, and how they perform it, and to find that one thing is substantially the same as another, if it performs substantially the same function in substantially the same way to obtain the same result, always bearing in mind that devices in a patented machine are different in the sense of the patent law when they perform different functions or in a different way, or produce a substantially different result. * * * Authorities concur that the substantial equivalent of a thing, in the sense of the patent law, is the same as the thing itself; so that if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form, or shape.'

"Similar language was used in *Electric Protection Co.* v. *American, Etc., Co.*, 184 Fed. 916, 923, C. C. A. 8 (1910): 'To sustain the charge of infringement the infringing device must be substantially identical with the one alleged to be infringed in (1) the result attained; (2) the means of attaining the result; and (3) the manner in which its different parts operate and co-operate to produce that result. If the devices are substantially different in either of these respects the charge of infringement is not sustained.' (Cases cited.)

"In *Boyden Power-Brake Co.* v. *Westinghouse*, 170 U. S. 537, 568, 569, 42 L. Ed. 1136, the court said: 'But even if it be conceded that the Boyden device corresponds with the letter of the Westinghouse claims, that does not settle conclusively the question of in-

fringement. We have repeatedly held that a charge of infringement is sometimes made out, though the letter of the claims be avoided. *Union Paper Bag Machine Co.* v. *Murphy*, 97 U. S. 120 (24:935); *Ives* v. *Hamilton*, 92 U. S. 431 (23: 496); *Morey* v. *Lockwood*, 75 U. S. 8 Wall. 230 (19:339); *Elizabeth* v. *American Nicholson Pavement Company*, 97 U. S. 137 (24:1005); *Sessions* v. *Romadka*, 145 U. S. 29 (36:609); *Hoyt* v. *Horne*, 145 U. S. 302 (36:713). The converse is equally true. The patentee may bring the defendant within the letter of his claims, but if the latter has so far changed the principle of the device that the claims of the patent literally construed, have ceased to represent his actual invention, he is as little subject to be adjudged an infringer as one who has violated the letter of a statute has to be convicted, when he has done nothing in conflict with its spirit and intent. "An infringement," says Mr. Justice Grier in *Burr* v. *Duryee*, 68 U. S. 1 Wall. 531, 572 (17:650, 658), "involves substantial identity, whether that identity be described by the terms, 'same principle,' same '*modus operandi*,' or any other. * * * The argument used to show infringement assumes that every combination of devices in a machine which is used to produce the same effect is necessarily an equivalent for any other combination used for the same purpose. This is a flagrant abuse of the term equivalent."

"'We have no desire to qualify the repeated expressions of this court to the effect that where the inventions is functional, and the defendant's device differs from that of the patentee only in form, or in a rearrangement of the same elements of a combination, he would be adjudged an infringer, even if, in certain particulars, his device be an improvement upon that of the patentee. But, after all, even if the patent for a machine be a pioneer, the alleged

infringer must have done something more than reach the same result. He must have reached it by substantially the same or similar means, or the rule that the function of a machine cannot be patented is of no practical value. To say that the patentee of a pioneer invention for a new mechanism is entitled to every mechanical device which produces the same result is to hold, in other language, that he is entitled to patent his function. Mere variations of form may be disregarded, but the substance of the invention must be there. As was said in *Burr* v. *Duryee*, 68 U. S. 1 Wall. 531, 573 (17:650, 659), an infringement "is a copy of the thing described in the specification of the patentee, either without variation, or with such variations as are consistent with its being in substance the same thing. If the invention of the patentee be a machine, it will be infringed by a machine which incorporates in its structure and operation the substance of the invention; that is, by an arrangement to mechanism which performs the same services or produces the same effect in the same way, or substantially the same way." "That two machines produce the same effect will not justify the assertion that they are substantially the same, or that the devices used by one are therefore mere equivalents for those of the other".' "

For the above reasons, we submit that there is no infringement. But even if it were true that the means, operation and result of Petitioner's device are sufficiently close to those of the patent in suit to invoke the doctrine of equivalents under normal circumstances, that doctrine is not applicable here because of the cancellation by Walker of a claim specific to Petitioner's accused device.

"It is a rule of patent construction consistently observed that a claim in a patent as allowed must be read and interpreted with reference to claims that have been cancelled or rejected and the claims allowed cannot by construction be read to cover what was thus eliminated from the patent. (Cases cited.) The patentee may not, by resort to the doctrine of equivalents, give to an allowed claim a scope which it might have had without the amendments, the cancellation of which amounts to a disclaimer. *Smith* v. *Magic City Kennel Club*, 282 U. S. 784, 790, 75 L. Ed. 707, 712, 51 S. Ct. 291; *Weber Electric Co.* v. *E. H. Freeman Electric Co., supra*, (256 U. S. 677, 678, 65 L. Ed. 1167, 1168, 41 S. Ct. 600); *I. T. S. Rubber Co.* v. *Essex Rubber Co., supra*, (272 U. S. 444, 71 L. Ed. 343, 47 S. Ct. 136). The injurious consequences to the public and to inventors and patent applicants if patentees were thus permitted to revive cancelled or rejected claims and restore them to their patents are manifest." (Case cited.)

—*Schriber-Schroth Co.* v. *Cleveland Trust Co.*, 311 U. S. 211, 220, 221, 85 L. Ed. 132, 137.

A patentee who has cancelled claims on particular subject matter has dedicated all rights which he might have had therein to the public. The patentee is "estopped to claim the benefit of his rejected claim on such a construction of his amended claim as would be equivalent thereto." *I. T. S. Rubber Co.* v. *Essex Rubber Co.*, 272 U. S. 429, 444, 71 L. Ed. 335, 343.

The cases of *Schriber-Schroth Co.* v. *Cleveland Trust Co.*, 311 U. S. 211, 85 L. Ed. 132, and *Exhibit Supply Co.* v. *Ace Patents Corp.*, 315 U. S. 126, 86 L. Ed. 736, cited in our

Brief in Support of the Petition for the Writ of Certiorari are only two of many decisions of this Court which we think the Circuit Court of Appeals overlooked in failing to make any ruling whatever on the effect of the proceedings in the Patent Office. In addition to the case cited in *Schriber-Schroth Co.* v. *Cleveland Trust Co.*, see

—*Sargent* v. *Hall Safe & Lock Co.*, 114 U. S. 63, 29 L. Ed. 67;

Shepard v. *Carrigan*, 116 U. S. 593, 29 L. Ed. 723;

Roemer v. *Peddie*, 132 U. S. 313, 33 L. Ed. 382;

Corbin Cabinet Lock Co. v. *Eagle Lock Co.*, 150 U. S. 38, 37 L. Ed. 989;

Hubbell v. *United States*, 179 U. S. 77, 83, 45 L. Ed. 95, 99;

Morgan Envelope Co. v. *Albany Perforated Wrapper Paper Co.*, 152 U. S. 425, 429, 38 L. Ed. 500, 502.

The facts in the present case are different from those in any of the above cited cases, but they are not sufficiently different, we submit, to warrant making an exception to the salutary and established doctrines dealing with the construction of claims of patents based on proceedings in the Patent Office.

The difference lies in the fact that Walker filed two applications for patent and the fact that the proceedings, upon which we rely chiefly to show the proper construction

of the claims in suit, took place in the application other than the one which matured into the patent in suit.

In their Brief (page 9) in Opposition to the Petition for the Writ of Certiorari, Respondents assert that Petitioner is seeking to distort the ruling of this Court in *Schriber-Schroth Co.* v. *Cleveland Trust Co.*, 311 U. S. 211, to reach the absurd conclusion that a pioneer patentee dare not file applications for improvement for fear a rejection of claims in the improvement application would require the Courts to limit the claims of the pioneer patent.

Petitioner is seeking no such ruling. Respondents repeatedly assert that the rejection in their second application was upon the ground that the electrical apparatus thereof was the equivalent of the mechanical apparatus of the patent in suit. (See statements, pp. 8, 10 and 11 of Respondents' Brief in Opposition to the Petition for the Writ.) The statements of the Examiner as to equivalency were made long after patent 2,156,519 had issued, and are not the proceedings upon which Petitioner relies to support its position. Claim 15 upon which Petitioner bases its argument was rejected (R. 1002) on the prior patent to Lehr and Wyatt, and other prior art (R. 1000). It was never rejected on Walker patent 2,156,519.

This is not a case where an inventor has filed a second application on an improvement on his prior patented device. Walker conceived of the electrical system of the second application Exhibit L at about the same time that he conceived of the mechanical tuning device of the pat-

ent in suit.* The second application was filed Sept. 18, 1937 (R. 954), only eleven days after the filing of the first application. This is simply a case where two devices are thought of for accomplishing a desired result, and two applications are filed instead of one showing both embodiments.

While no case has been found where this Court has considered the effect of a patentee voluntarily dividing an invention and filing two applications, or the effect of proceedings in a co-pending application upon a patent, similar situations have arisen in the lower courts, and the established rules, as stated in 48 Corpus Juris 218 are:

> "Where it is in evidence from the record of the patent office that a certain construction was there contemplated, and that the patent would not otherwise have been granted, that construction will be followed, and no objection can be made to the same construction on the ground that it is narrow, and will render the patent practically useless. But an interpretation by the patent authorities extending claims beyond their proper import is not binding on the public. * * *
>
> "Where different applications by a patentee, and interference proceedings relating to the same subject matter are pending at the same time, all may be considered in determining the construction of the patent, as granted. * * *

*"Q. When did you first conceive of the idea of using a filter in an amplifier circuit in a recording system which has a microphone recorder as shown in figure 5 of the drawing of application serial No. 164,534, offered as defendant's Exhibit L?

"A. To the best of my knowledge that was about the time I started experimenting with acoustical tuning, which was during the early part of 1937." (Walker, R. 516, 517).

"Where an inventor divides up his invention so as to present certain elements in different patents, he is thereby limited to a more strict and narrow construction than might have been otherwise necessary."

In *North American Chemical Co.* v. *Dexter*, 252 Fed. 148 (D.C. E.D. Wisc.), there was a situation similar to that in the present case. Three patents to Thoma and one to Arnold, all assigned to the plaintiff, had been pending in the Patent Office at the same time. The Court investigated all the proceedings in the Patent Office, saying:

"It is my judgment that the court is not only permitted, but is required, to consider the plaintiff's claims, in view of the time and condition under which the four patents were brought out. They were practically concurrent and co-pending patents. Each one seeks to be contributory in a greater or less degree to the advance or change in the art which it is proposed to bring about. Whatever might have been the course to be pursued in interpreting or construing them, if they appear to be otherwise independent, the court is not at liberty, nor is it fair to the patentee, to ignore the express reference made in these several patent records to the pendency of the other patents and the general purposes sought to be accomplished by the four patents as a whole. If the problem concerned the interpretation of land or other property grants, each containing references to the provisions or the purposes of the other, the court would not hesitate to fully refer to all of them for the purpose of ascertaining the true intent and the construction to be placed upon each, as well as upon all." 252 Fed. at 160, 161.

In *Tampax, Inc.* v. *Personal Products Corporation*, 123 Fed. (2d) 722 (C. C. A. 2), the patentee, Hass, had cancelled claims from a first filed application. At the same time that he cancelled the claims he filed a second application with an amended specification and attempted to recapture what he had abandoned in the first application. The claims, which issued in the second application, were held limited by the doctrine of file-wrapper estoppel and hence not infringed. The Court said:

> "If Haas had secured the claim by the introduction of Figure Two and 'the second passage' into the first application, we cannot doubt that there would have been a 'file-wrapper estoppel.' *I. T. S. Rubber Co.* v. *Essex Rubber Co.*, 272 U. S. 429, 444, 47 S. Ct. 136, 71 L. Ed. 335; *Schriber-Schroth Co.* v. *Cleveland Trust Co.*, 311 U. S. 211, 221, 61 S. Ct. 235, 85 L. Ed. 132. He would have failed to get a claim based upon such 'convolutions' as were inevitable by forcing a long strip into a short core; and in its place he would have secured a claim into which he introduced the element that the 'convolutions' must be regular zigzags. Obviously it made no difference that this limitation was incorporated into the claim only by references; and it also made no difference that the claim was itself transferred from the earlier application to another, co-pending with it. The doctrine of 'file-wrapper estoppel' depends upon the fact that, when an applicant has accepted the rejection of a broad claim he may not later assert that another claim, deliberately restricted to secure its allowance, is its equivalent; and that argument is as cogent when the claim is transplanted into a new application as when it is amended in the original." 123 Fed. (2d) at 723.

The facts in the *Tampax* case are, of course, different from those in the case at bar, but the case illustrates the importance of considering all the proceedings in the Patent Office relevant to the issuance of claims. If only the file wrapper of the patent in suit had been considered, no estoppel could have been shown.

In *Dodge Needle Co. v. Jones*, 159 Fed. 715 (C. C. A. 3), where the facts were similar to those in the *Tampax* case, the Court said:

> "* * * the admissions and statements of the applicant in the former case are not irrelevant to the issues now under consideration, and we are not to be asked to close our eyes to evidential facts upon a ground so slight as the one suggested.
>
> * * * * * * * * *
>
> "Whatever view we take as to the question, whether or not the application of August, 1901, was a continuation of the original application of November, 1899, it seems clear that, after the withdrawal of claims 4 and 5 of the new application, the invention covered thereby was abandoned, and needles with headed pins, as described therein, became public property, and cannot now be monopolized by the appellants." 159 Fed. at 722, 725.

In *Lewis Blind-Stitch Mach. Co. v. Arbetter Felling Machine Co.*, 208 Fed. 992, D.C. N.D. Illinois E.D. (Affirmed 219 Fed. 557) the facts were quite similar to those in the case at bar. Soon after Lewis filed the application which matured into the patent in suit, he filed another application called the "seam-application." (See 208 Fed.

1000). Both parties sought to construe the patent in suit by reference to the co-pending application. Judge Sanborn said:

> "Ordinarily a patent is to be construed by its own contents, its file wrapper, and a consideration of what there was left previously undiscovered in the particular art. The patent is the measure of the grant; other applications not usually being material to its construction. But the rule of construction adopted respecting several deeds or contracts between the same parties, made about the same time, relating to the same subject-matter, and as parts of the same transactions, undoubtedly applies to patents and patent applications. All may be resorted to on an inquiry as to the meaning of any one. The seam-applications, interference, and Lewis' patent application, related to the same subject-matter, and were all pending during substantially the same period. Therefore all may be looked into to determine the proper construction of the Lewis patent." 208 Fed. at 1001.

All of the proceedings in the Patent Office are conducted in the name of the Commissioner. While the mass of business is so great that the Commissioner does not review all the actions of the Examiners, there appears to be no sound reason for excluding consideration of any proceeding conducted in his name, if it is relevant.

In the present case, it must be presumed that the Examiner of Division 5, who handled the application which matured into the patent in suit, regarded the claims as limited to an acoustical device. That is all that is disclosed in the patent. The Examiner cited no art on elec-

trical filters or electrical tuning. Had he regarded such systems as within the scope of the claims, it would have been his duty to consult with the Examiner in Division 42. The result would have been a citation of art on electrical tuning and the rejection of the claims on the basis that no invention was involved in incorporating a filter in the Lehr and Wyatt electrical recording system, just as the Examiner in Division 42 rejected (R. 1002) claim 15 specific to the electrical system on that basis when the question was presented to him in the co-pending application Exhibit L (R. 953).

In the very file wrapper of the patent here in suit we have a situation the same as that in the *Schriber-Schroth Co.* v. *Cleveland Trust Co.* case. Walker cancelled claims (20 and 27—see analysis *supra*, pages 42-43), and inserted the more limited claims here in suit, when rejected on the prior art. Extensive arguments and representations were made to the Patent Office that the revised claims containing the new phrases "pressure responsive device," "means for tuning," "means to accent," "interference eliminating means," "resonance means," "natural acoustical period of oscillation," etc., limited the claims to the structure shown in the drawing and described in the specification. It was argued repeatedly that the phrase "means for creating a pressure impulse" distinguished from the gun of the Batcheller patent.

We submit that the Circuit Court of Appeals erred in ignoring the proceedings in the Patent Office, in both the application (Exhibit T) which matured into the patent in

suit, and the co-pending application (Exhibit L). We submit that each of these applications shows clearly that Petitioner's device does not infringe the claims in suit, because it uses a gun instead of a pressure impulse chamber, because it uses a hot wire microphone instead of a pressure responsive diaphragm, and because it uses ordinary electrical equipment to amplify the desired signals instead of an acoustical resonator. Respondents sought, but the Patent Office refused to grant, a patent on such a device, and the patent in suit should not be construed to cover it.

Conclusion

Respondents seek a monopoly on apparatus entirely different than that disclosed or intended to be covered by the patent grant. In consideration for disclosure of a pressure impulse chamber and a mechanical system for recording pressure pulses made with it, they seek, by broad, indefinite and functional claims, to prevent Petitioner from using a gun with an old and well-known electrical system adapted to record echoes. They ask the Court to ignore such limitations as were imposed in the claims during the prosecution of the application in the Patent Office and to ignore negotiations in the co-pending application seeking claims specific to an electrical recording system like that used by Petitioner.

The decisions of this Court in *General Electric Co.* v. *Wabash Appliance Corp.*, 304 U. S. 364, and *Schriber-Schroth Co.* v. *Cleveland Trust Co.*, 311 U. S. 211, preclude the attainment of such a result.

The claims are not drawn in accordance with the requirements of R. S. Sec. 4888 and should be declared invalid because they are functional and broader than the invention. If valid, they should be held not infringed by apparatus differing from that disclosed in the patent in means, operation and result. The proceedings in the Patent Office show that a device like Petitioner's was expressly excluded from the patent grant.

The decision of the Circuit Court of Appeals should be reversed.

Respectfully submitted,

EARL BABCOCK,
Duncan, Oklahoma,
Attorney for Petitioner.

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